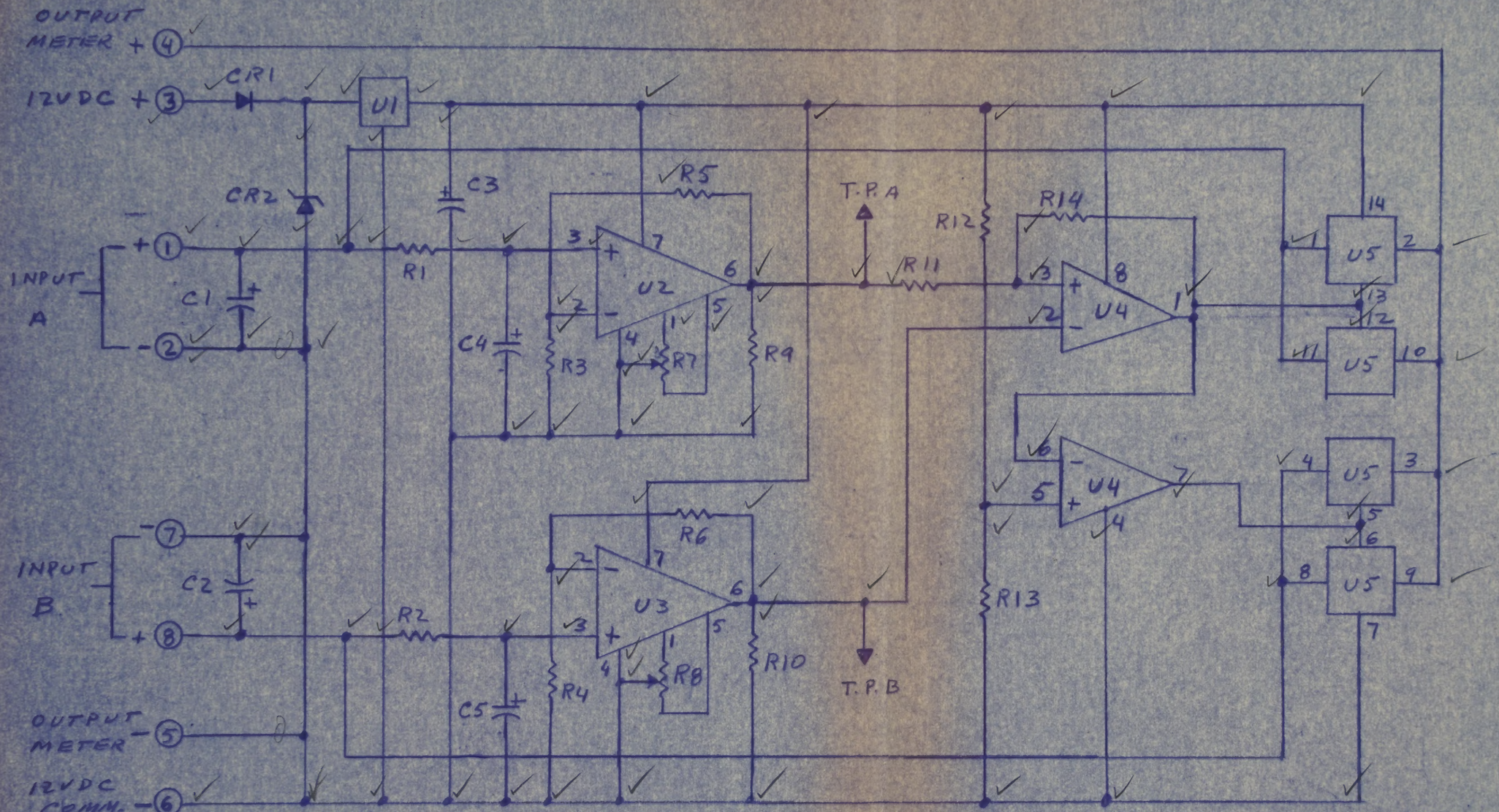


3. PARTS LIST: PL 101772
2. ASSEMBLY: 101774
1. TOP DRAWING: 101772

NOTES:

DIMENSIONS ARE IN INCHES AND AFTER PLATING	DR R. Lucas	4/1/83
TOLERANCES (unless otherwise specified)	CHK R. Lucas	4-17-83
.X ±.1	DSGN	
.XX ±.03	PROJ	
.XXX±.010	REL R. Lucas	4-17-83
ANGLES±0.5°	APPROVED	
MACH SURF √	APPROVED	
	DO NOT SCALE DRAWING	

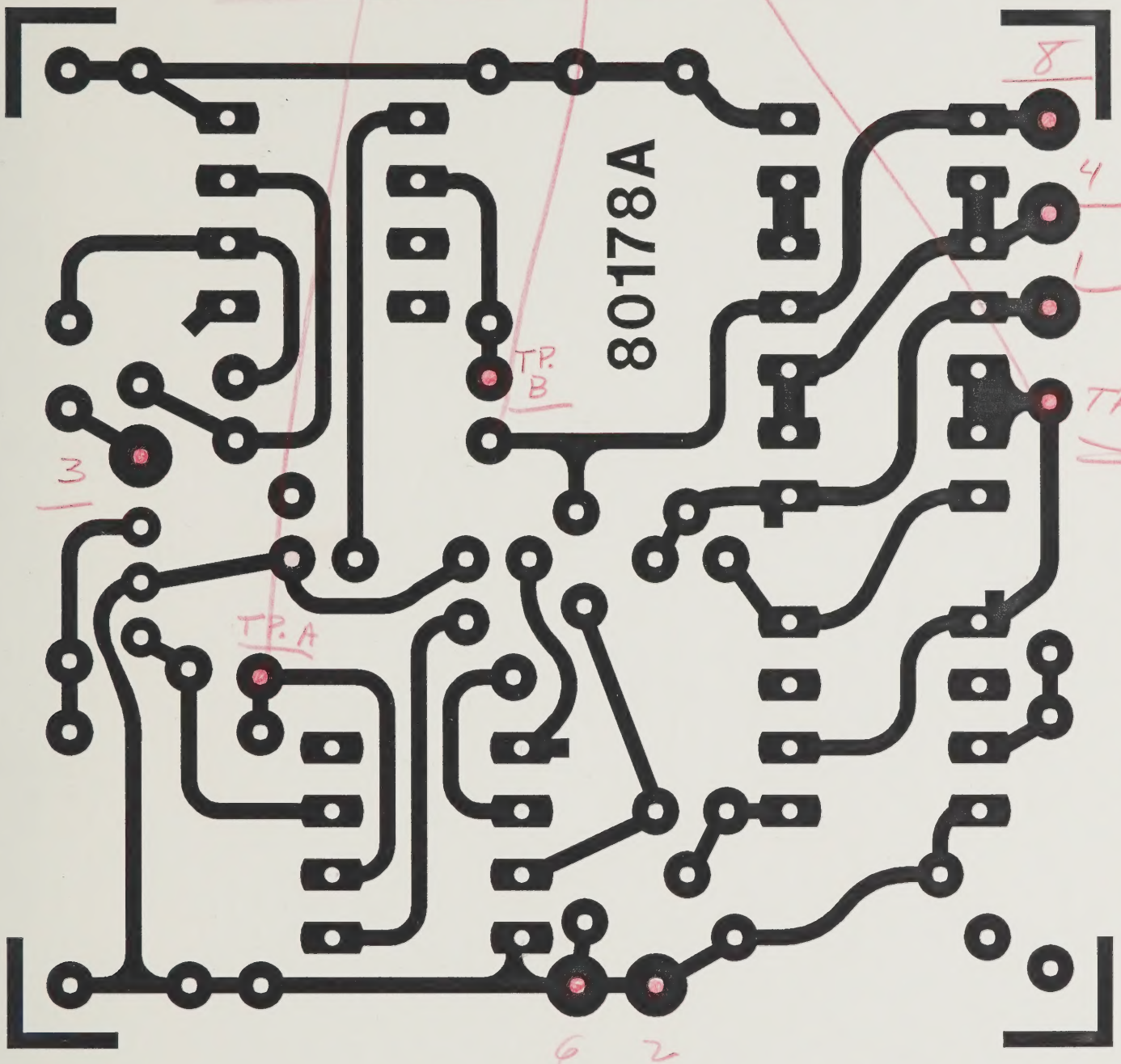
Parko
ELECTRONICS COMPANY INC., SANTA ANA, CALIF.

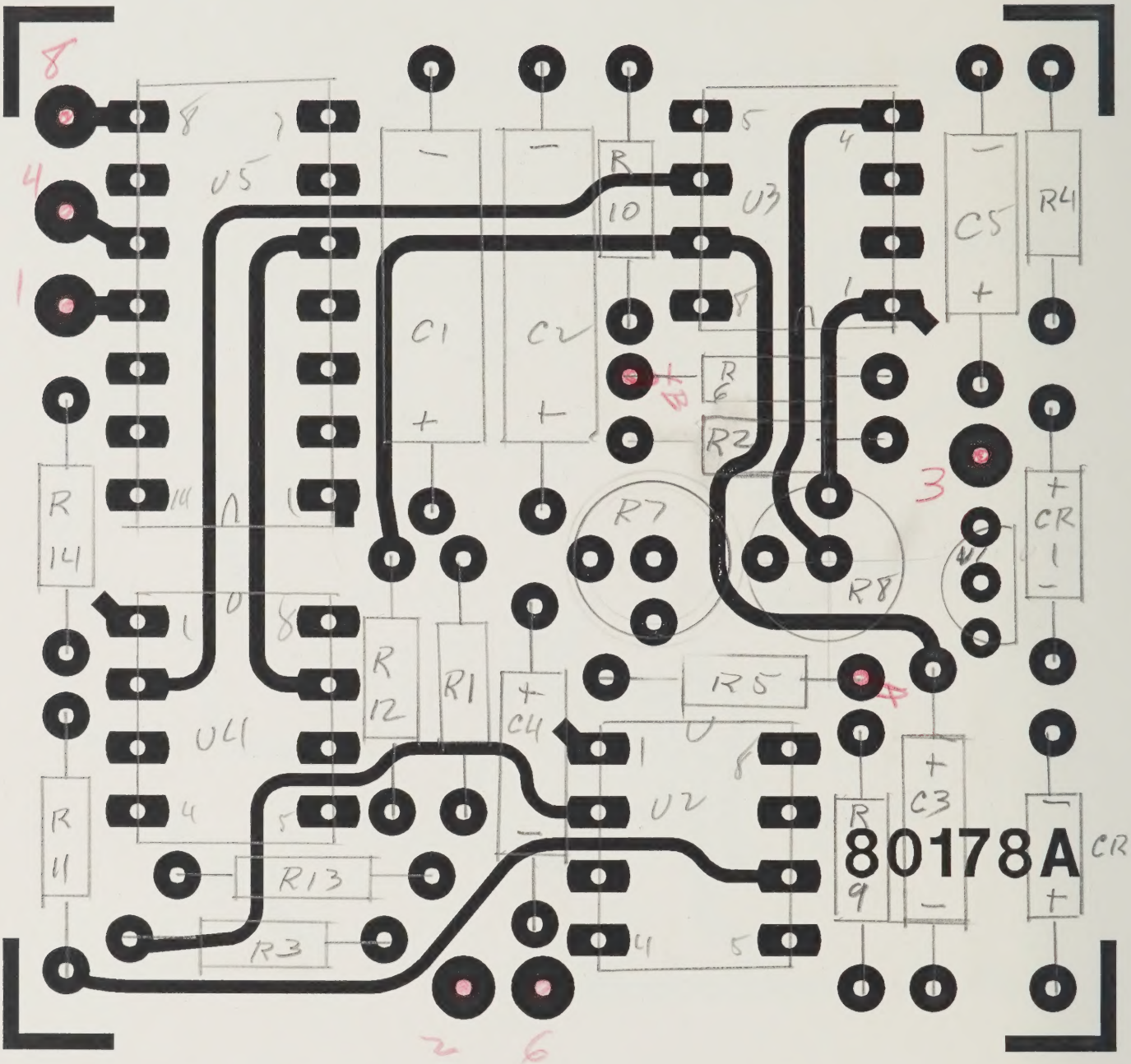
HI-TEMP. (M.V.) SELECTOR MODULE

CODE IDENT NO.	SIZE		REV
13979	B	101773	
SCALE —		SHEET 1 OF 1	

101773
SHEET 1 OF 1

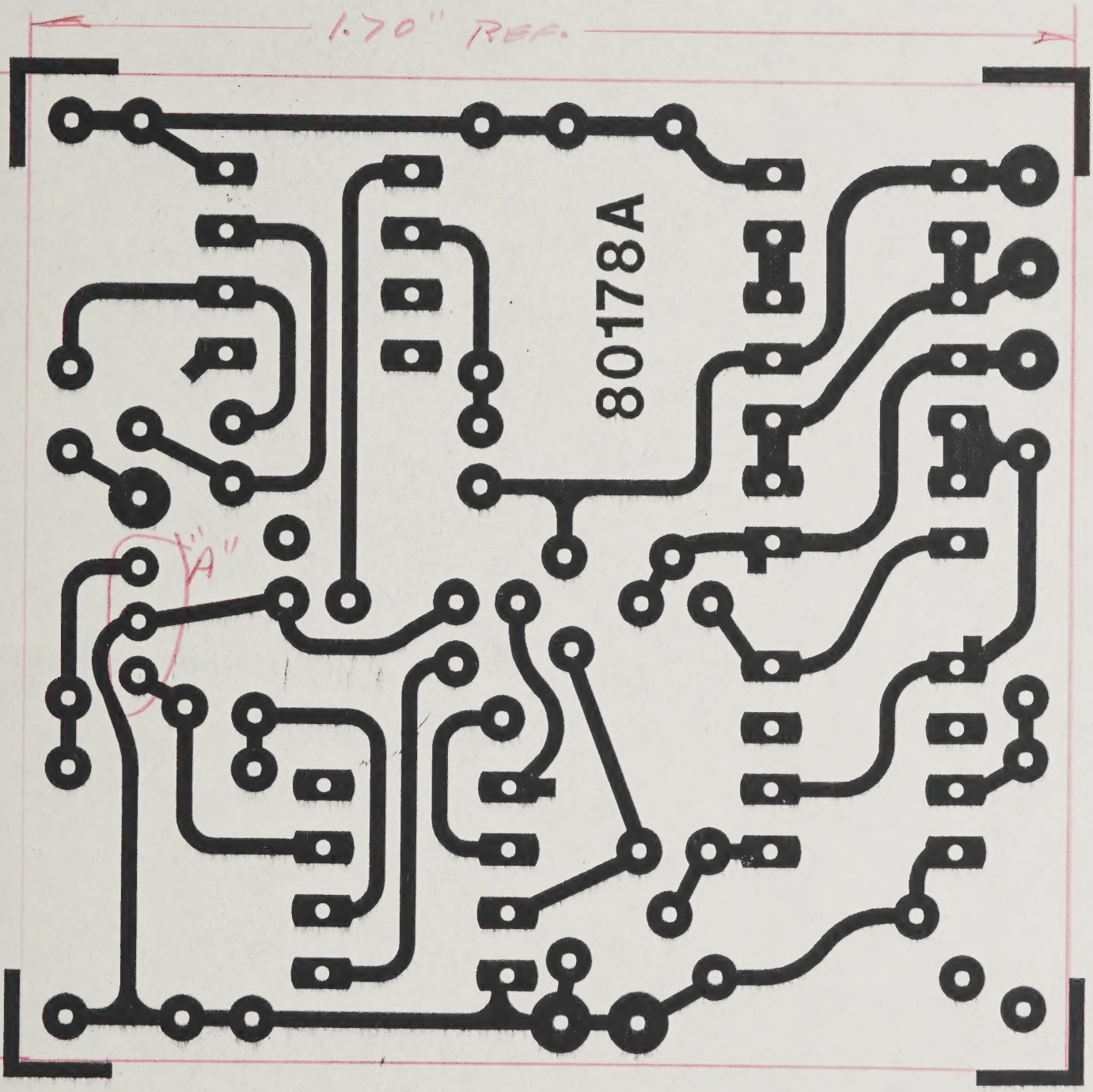
TPA, TPB AND TPC
PLEASE LEAVE LONG.





101774A

10-12-91



HOLE DIMENSION AFTER PLATING
DRILL ALL HOLES .035" (#65) EXCEPT AS NOTED
5 "A" HOLES .025" (#72) - 3 HOLES
ALL HOLES PLATED THRU
SOLDER PLATE AND FUSE ALL CIRCUITRY
MATERIAL: .032" GLASS EPOXY, 2 OZ. COPPER
TOP DWG.: 101772
NOTES:

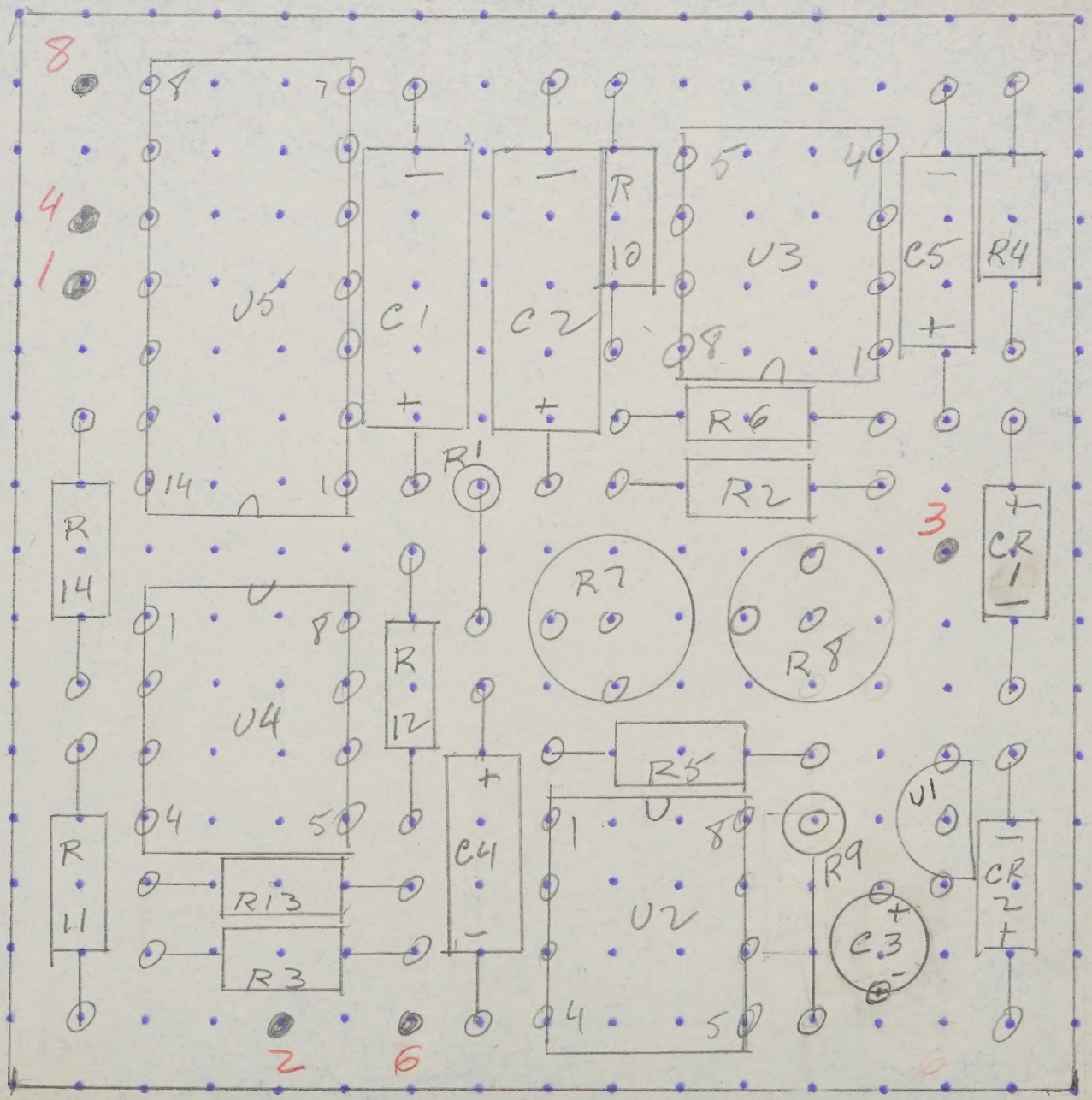
80178A 7-12-81

1.6

P.C. BOARD

80178-A

1.6



HEADER

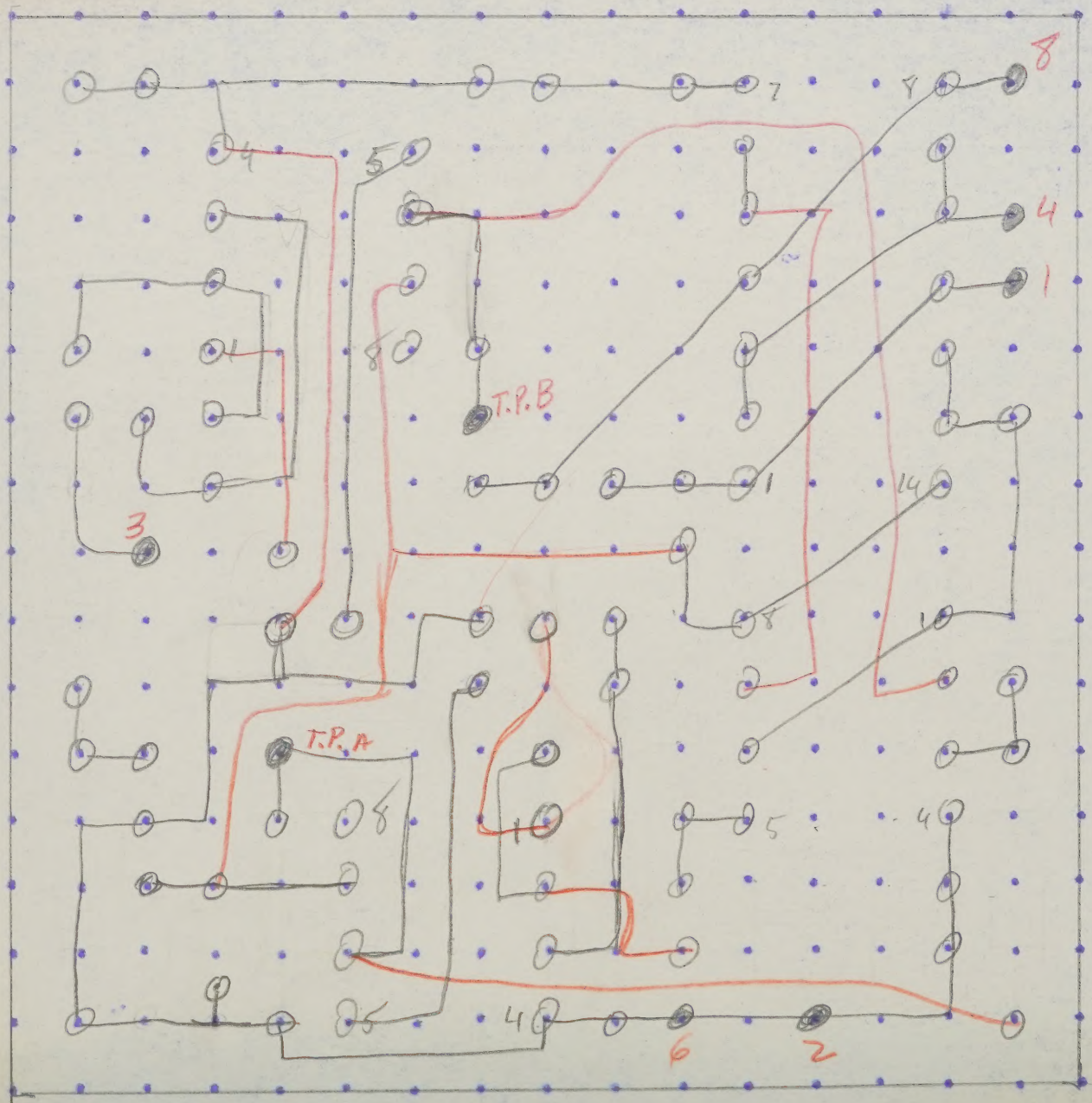
101722

101744A-ASSY

6-2-91

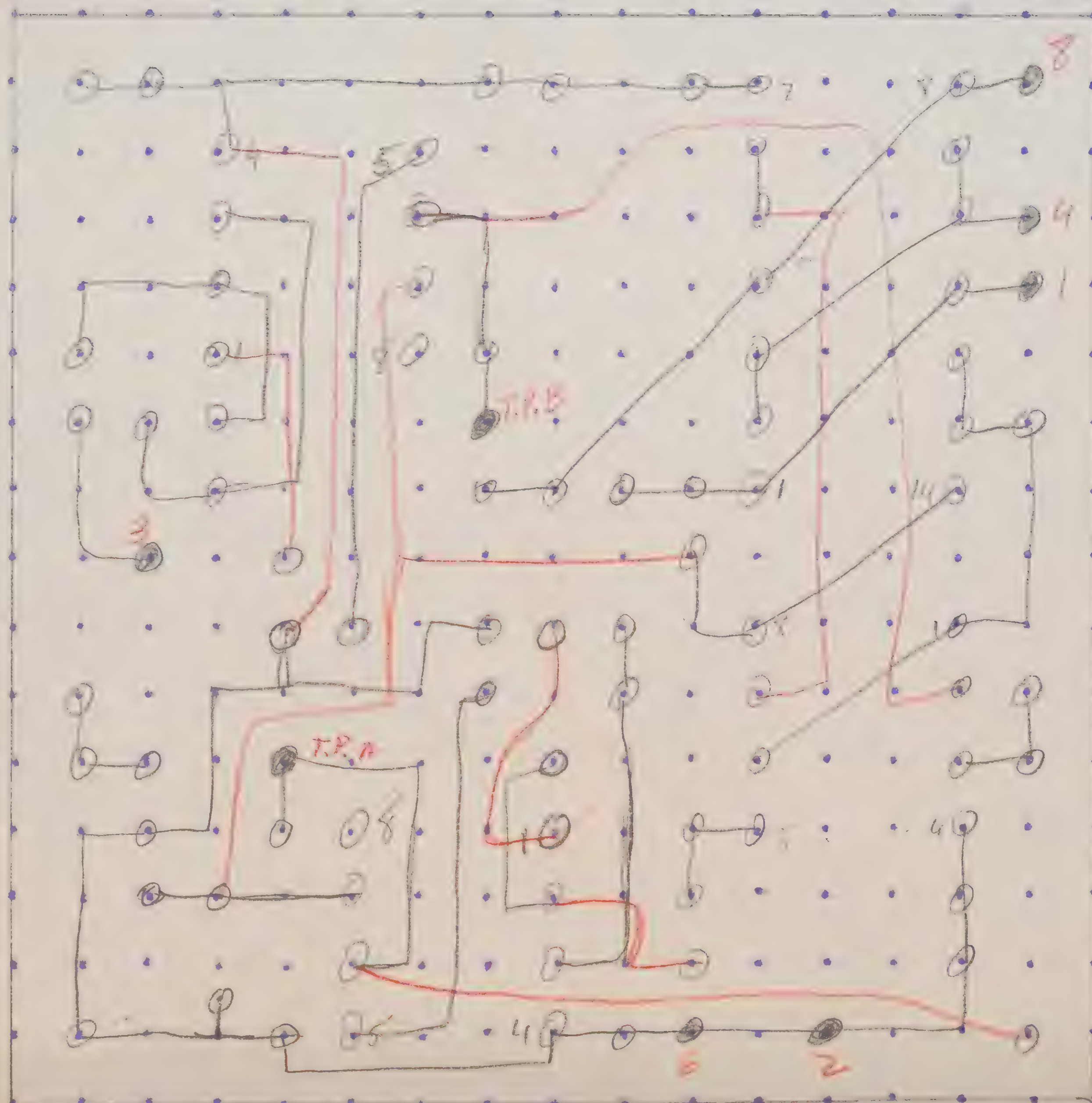
P.C. BOARD

801784

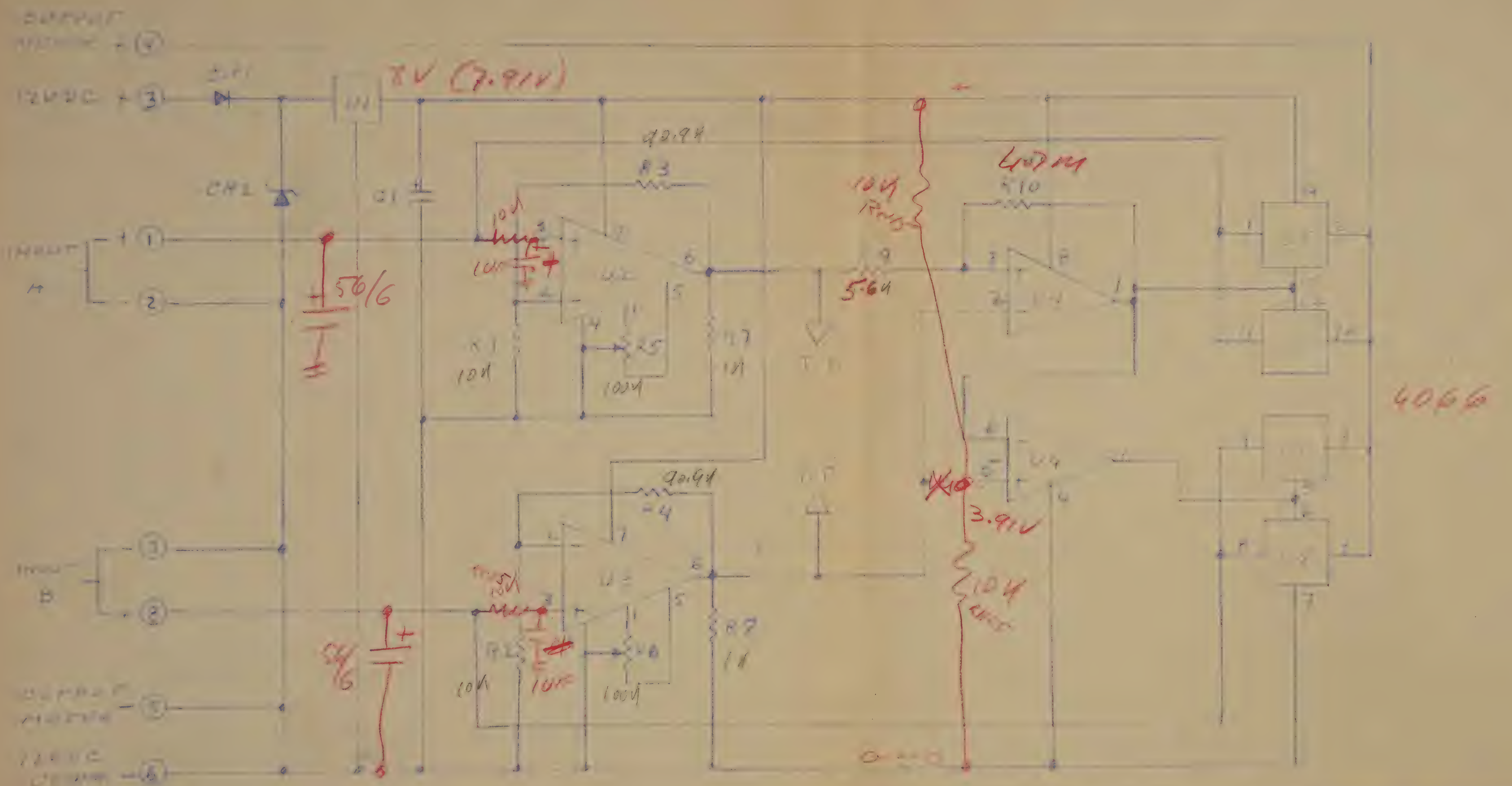


A551-101774A-

80178A



AS51-101774A-



3 PARTS LIST PL 101772
2 ASSEMBLY 101770
1 TOP DRAWING 101772
NOTES

DIMENSIONS ARE IN INCHES AND AFTER PLATING	
TOLERANCES (unless otherwise specified)	
XX ± .03	APPROVED
ANGLES ± 0.5	APPROVED
	DO NOT SCALE DRAWING

Parko
ELECTRONICS COMPANY INC., SANTA ANA, CALIF.

HI-TEMP. (M.V.)
SELECTOR MODULE

13979	B	101[illegible]

80178

CUT MODIFIED AFTER
UNITS WERE BUILT.

x NEEDS NEW - LAYOUT -
ARTWORK - ETC

4-21-83

80

8018

GND MISSING ON

U3 - PIN 4 AND R2

U2 - PIN 4 AND R1 (R3)

R10 = 4.7 MEG. R603
14

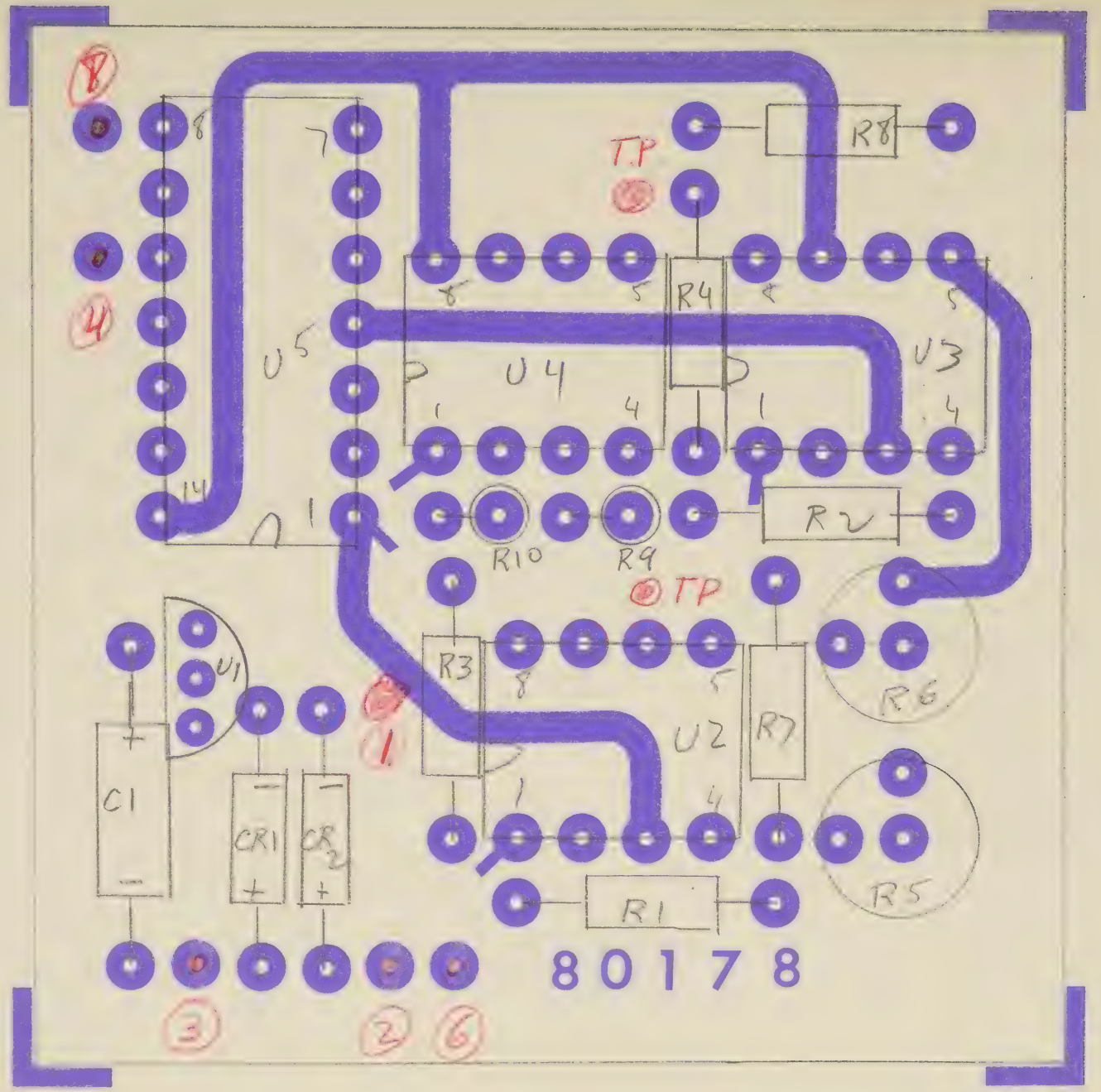
ADD

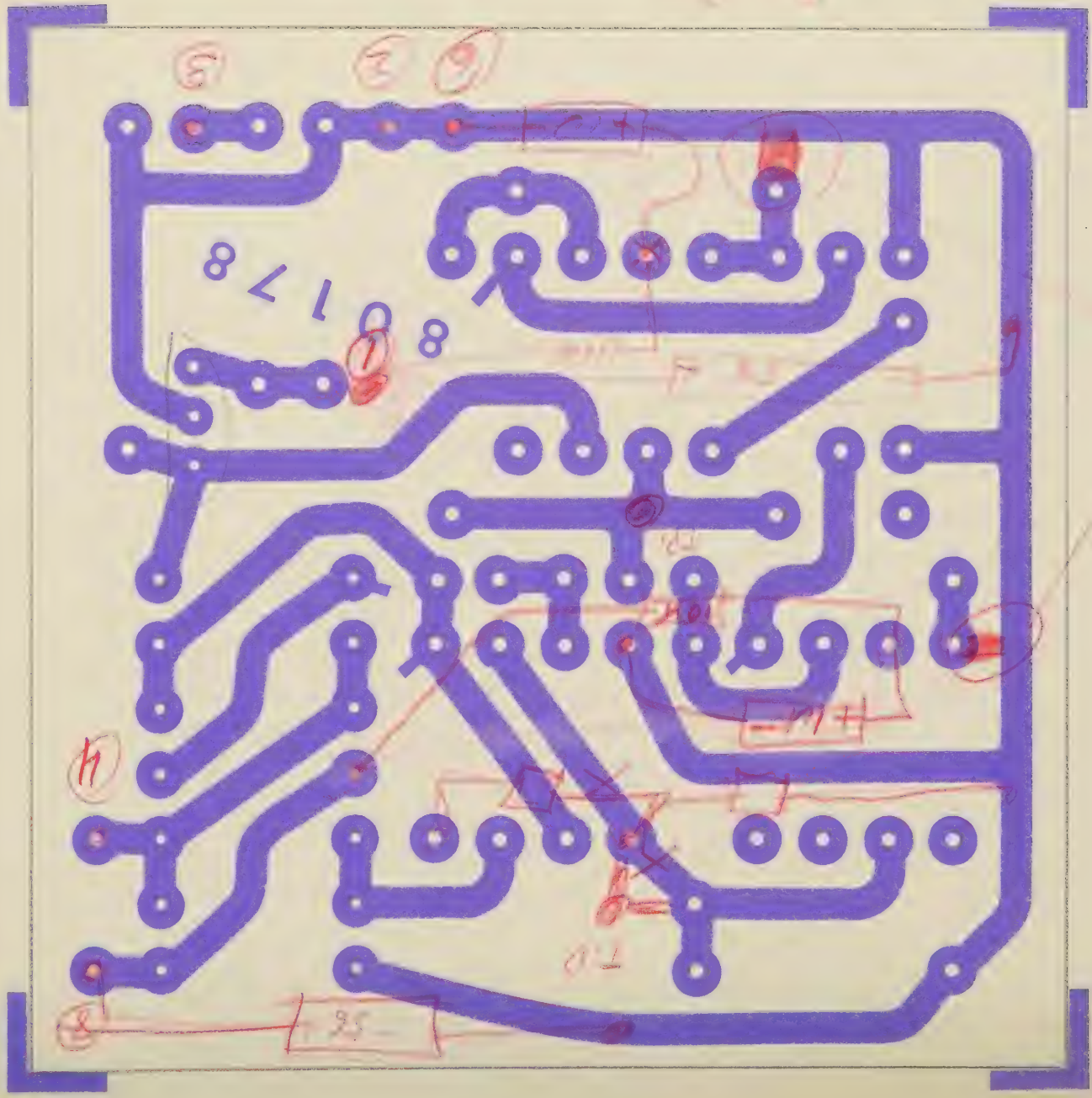
2 - 10K - R605 IF POSSIBLE

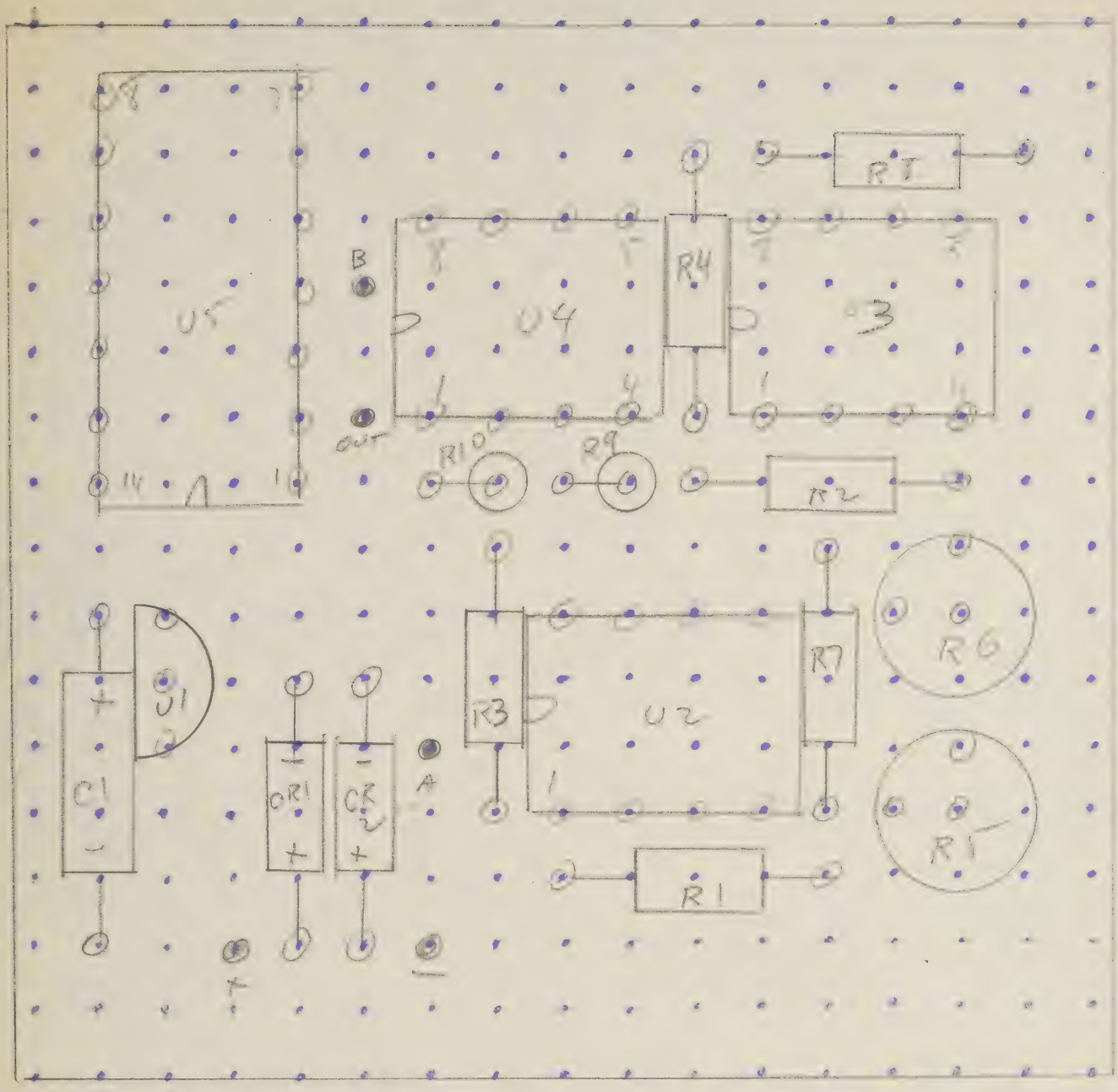
2 - 10K - R655

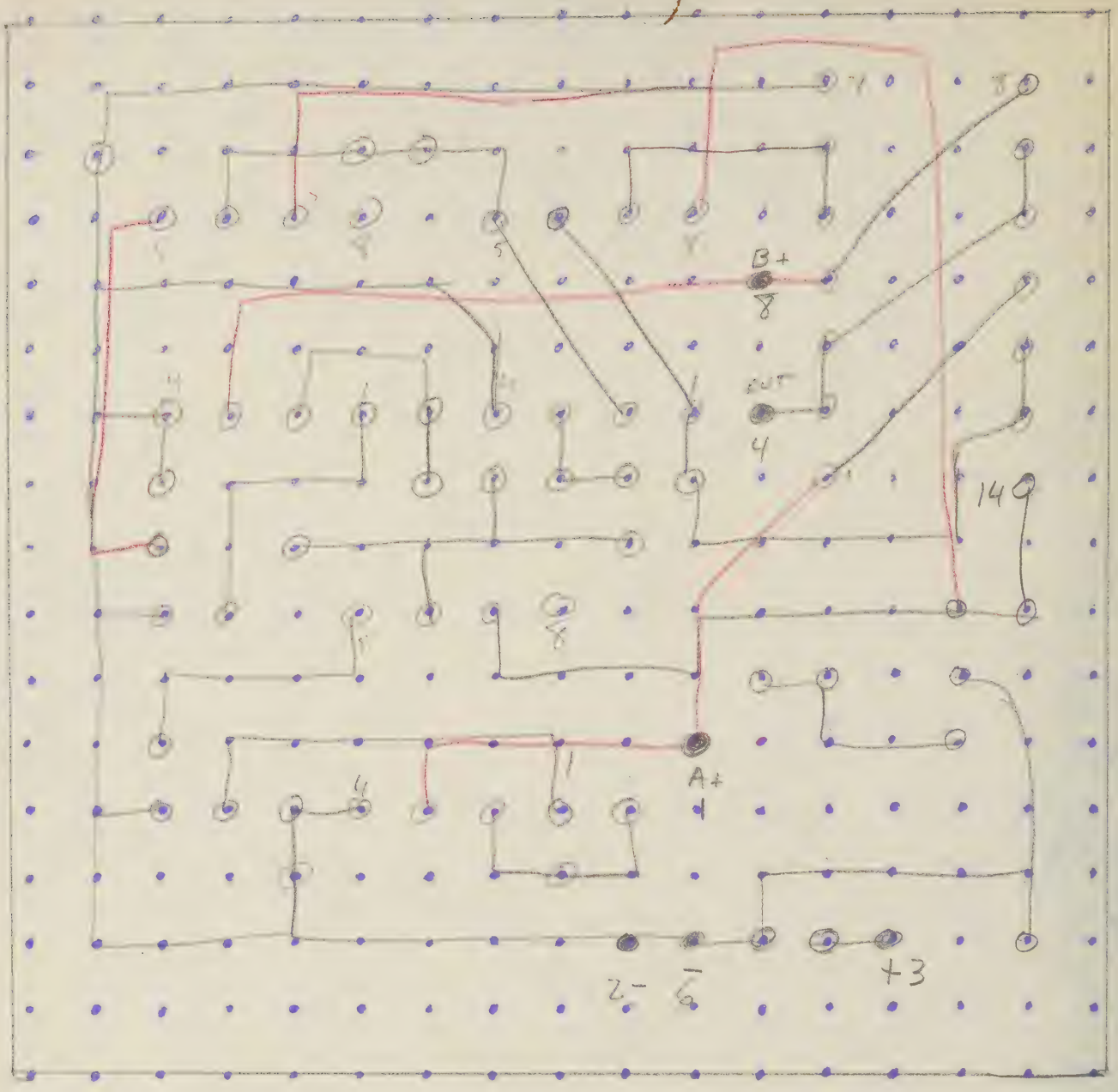
2 - 56UF/6V - C513 (BASE)

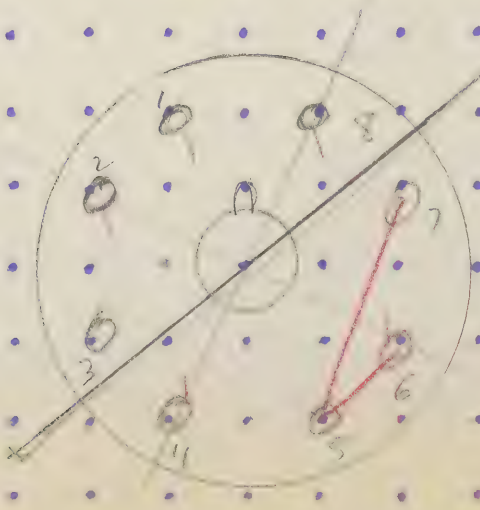
2 - 1UF/35V - C513 (ANODE)


8
4
U5
U4
U3
U1
U2
R8
R4
R2
R10
R9
R3
R7
R6
R5
R1
C1
CR1
CR2
T.P
TP
80178
3
2
6
1




U5
B
OUT
U4
R4
U3
R7
R10
R9
R2
R3
U2
R6
U1
C1
R1
C2
A
R1


B+
NT
A+
140
+3


BOARD
BARE SIDE
THIS
INSIDE
VIEW

101 772

SET-UP PROCEDURE

1. SET R5 FOR A GAIN READING "B" OF 10 ON 10 MV INPUT. CHECK TP. B FOR 100 MV.
2. CONNECT INPUT "A" AND "B" - SET INPUT TO 10 MV
3. WITH A 270 METER MONITOR ON TP-C1 CH 2 SWITCHING 20 TO 40 WHILE ADJUSTING R7.
4. REMOVE JUMPER AT INPUTS. RAISE INPUT TO CHAN "A" UNTIL U4 SWITCHES HI. INPUT S/B IDENTICAL TO CHAN. B INPUT. IF NOT TRY ADJUSTING R7 WHILE MONITORING TP "A". WITH 10 V MV INPUT TP A S/B 100 MV.
5. CHECK SWITCHING AT 2 MV, 5 MV, 10 MV INPUTS. MEASURE OUTPUT AT PIN 7 U8. OUTPUT SHOULD FOLLOW INPUTS. IT MAY BE NECESSARY TO ADJUST "A" CHANEL .1 MV HIGHER FOR SWITCHING. CHECK HYSTERESIS OF .5 MV MIN.
6. CHECK OUTPUT AT DIFFERENT POINTS. IT SHOULD REMAIN WITHIN TOLERANCE OF ± .5 MV
7. CHECK IT BY SETTING CHA. "B" AND BRINGING CHA "A" UP.

101772 4-[illegible]

SET-UP PROCEDURE.

~~R6~~ R7

1. SET CHANNEL B" TO A GAIN OF 10 WITH 10MV IN (100MV OUT)

2. PARALLEL INPUTS A' & B" - SET AT 10MV INPUT

3. WITH [illegible] ADJUST [illegible] UA-1, P14 [illegible] FOR SWITCHING "ON" [illegible] ADJUSTING. ~~[illegible]~~ R7

4. REMOVE PARALLEL AT INPUTS - INCREASE CHAN A" UNTIL U4 SWITCHES - INPUT S/B - IDENTICAL TO CHAN - B INPUT

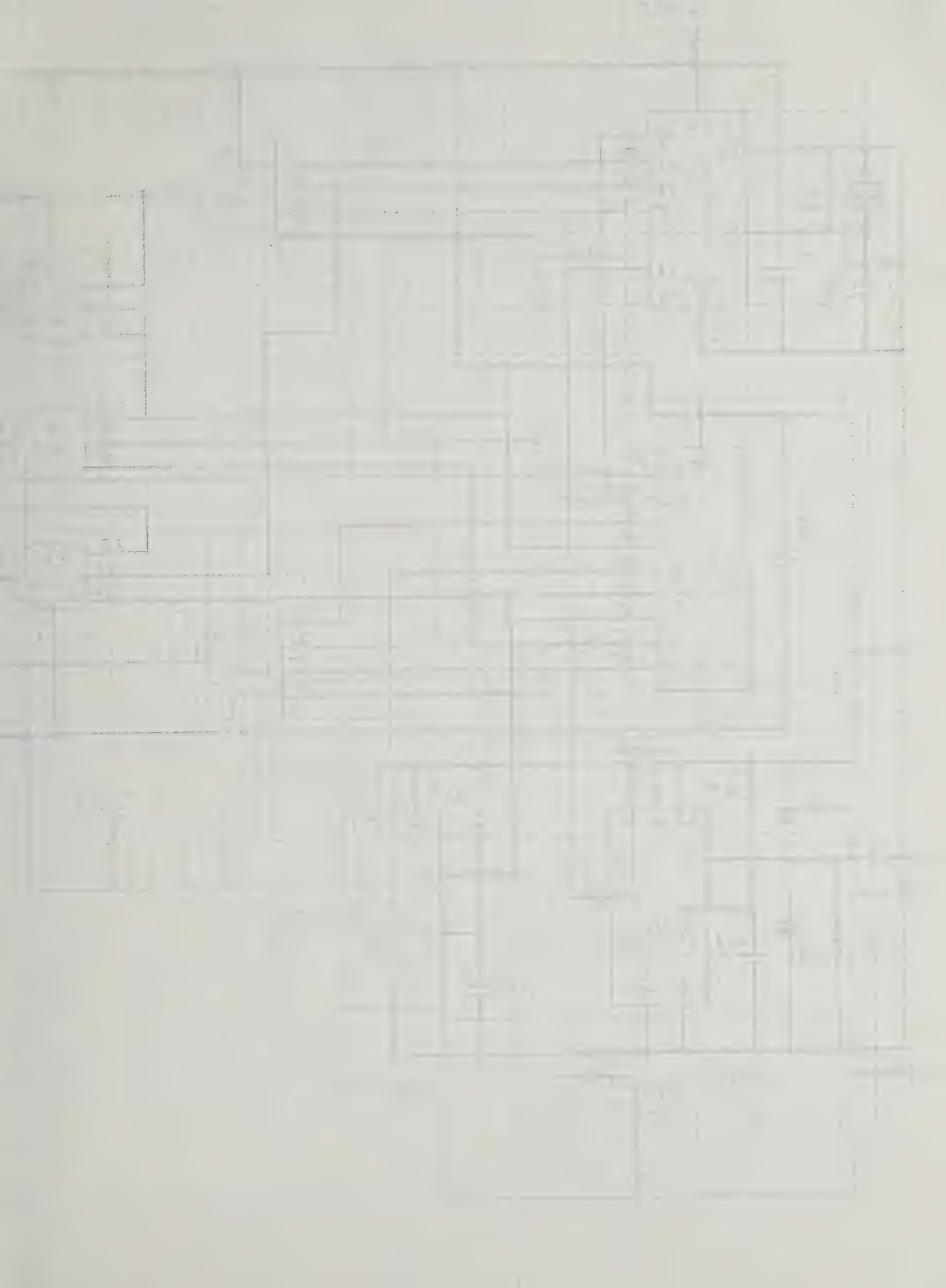
5. CHECK SWITCHING AT 2.0, 5.0, 10.0, 15.0, 20.0 MV. IT MAY BE NECESSARY TO ADJUST "A" CHAN - .1 MV HIGHER FOR HYSTERESIS .5 MV MAX. } LINEARITY

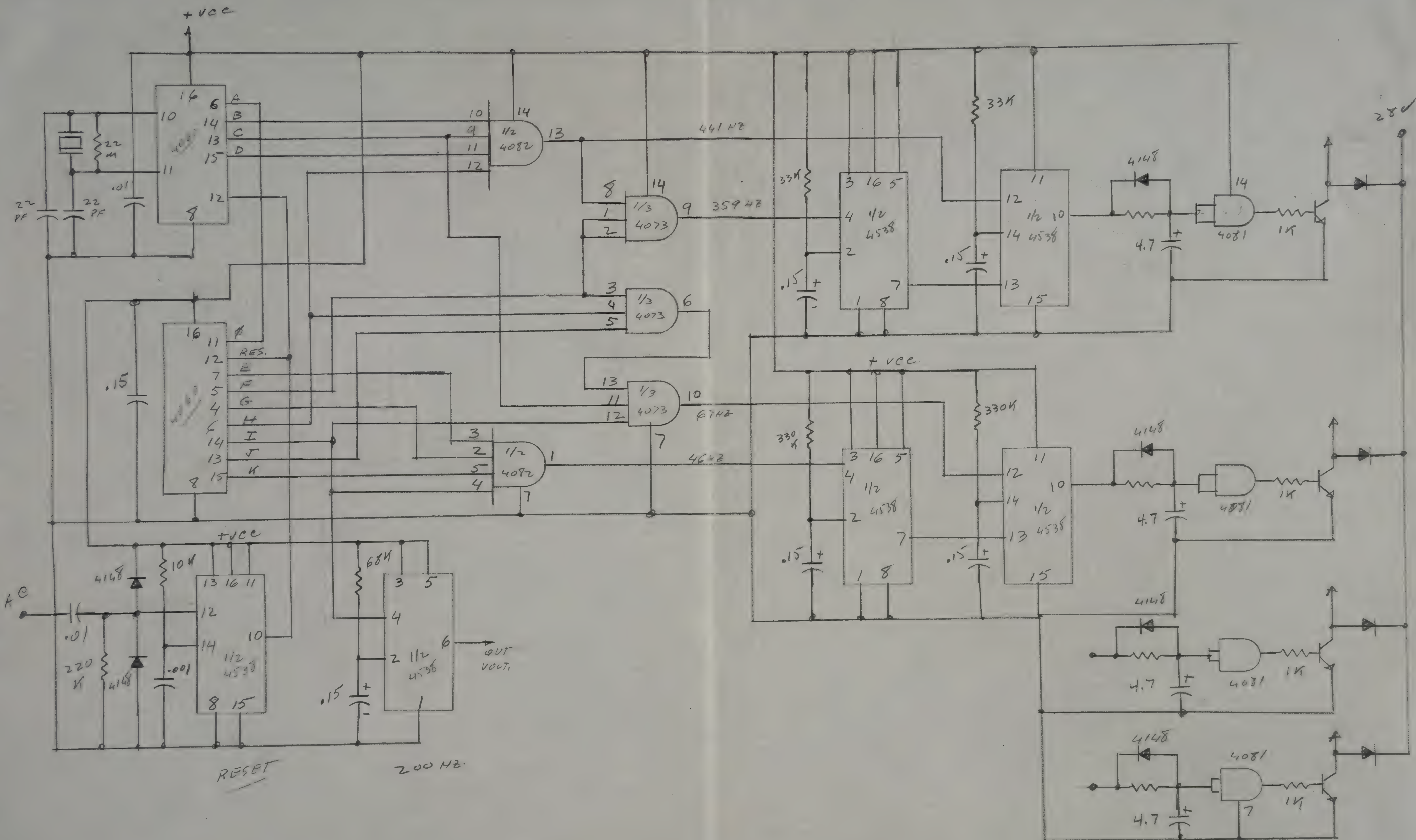
MIGHT HAVE TO GO UP TO .3 HIGHER ON "A"

6. CHECK OUTPUT AT DIFFERENT SWITCH POINTS - SHOULD ALWAYS READ HIGHEST INPUT ~~[illegible]~~ ± .5MV

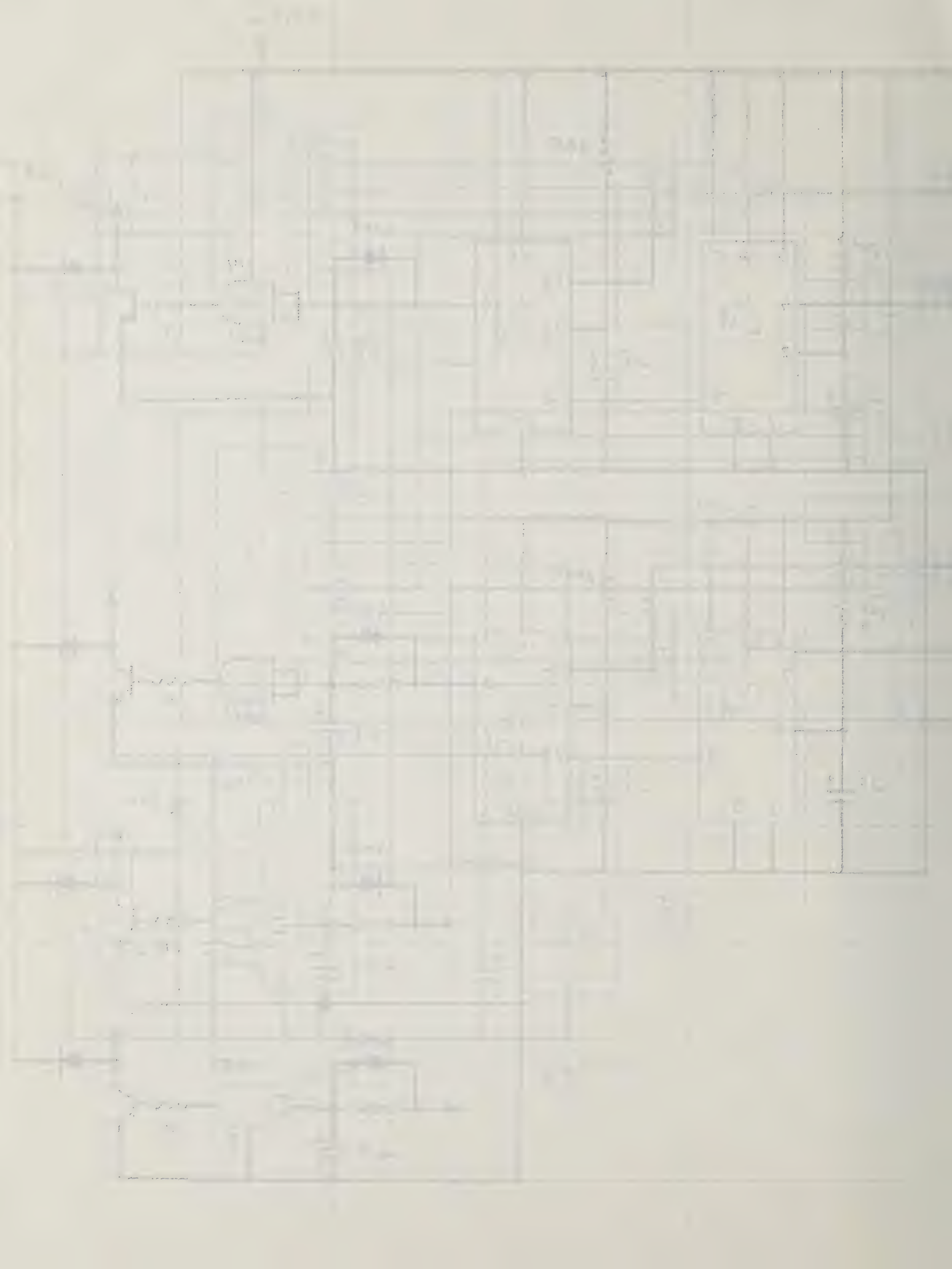
CHECK BY SETTING "B" CHAN. AND [illegible] CHA "A" UP.

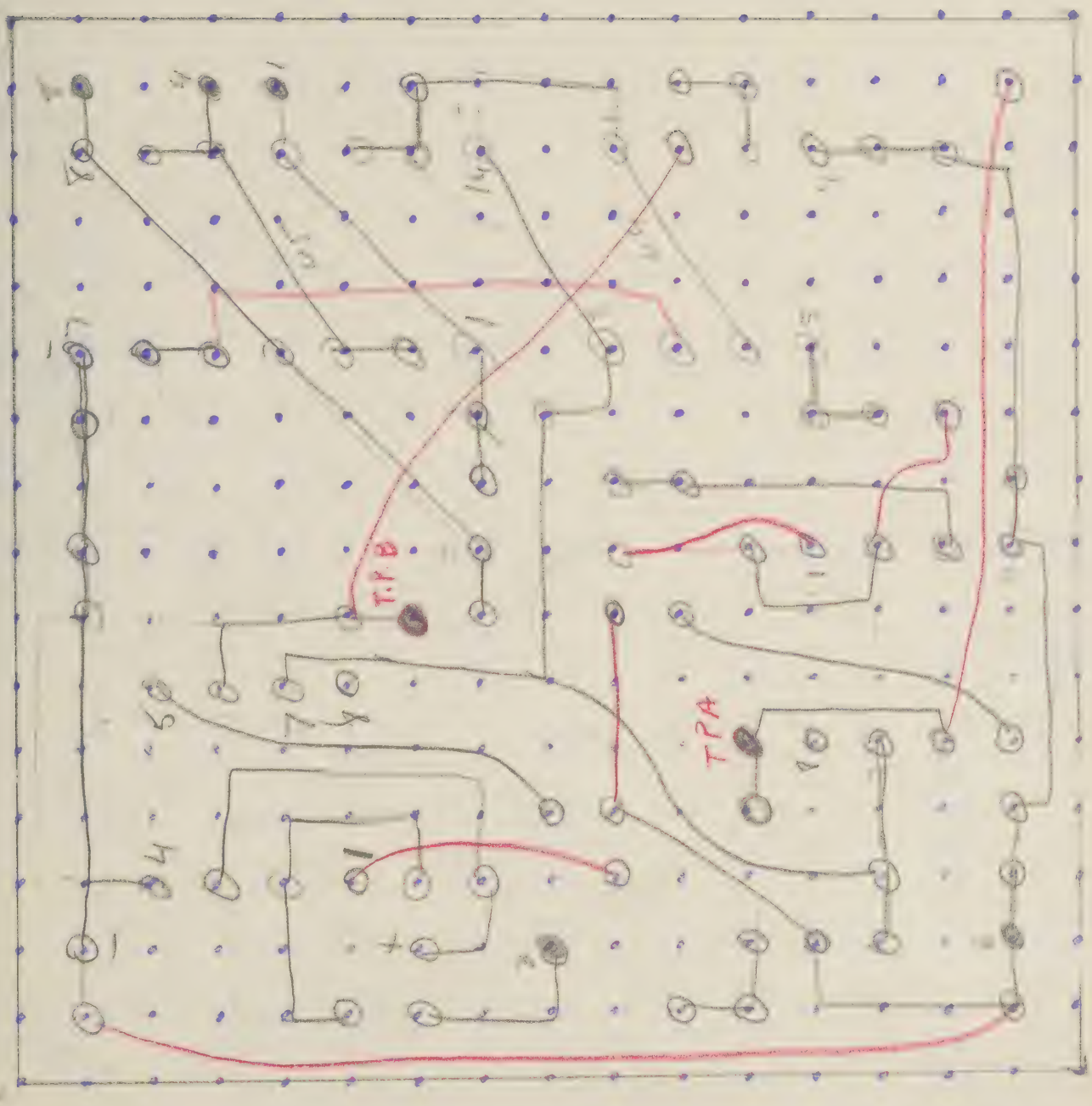
4.1 IF UNBALANCED ADJUST R? FOR A GAIN AT 100 WITH 10MV IN AT [illegible].

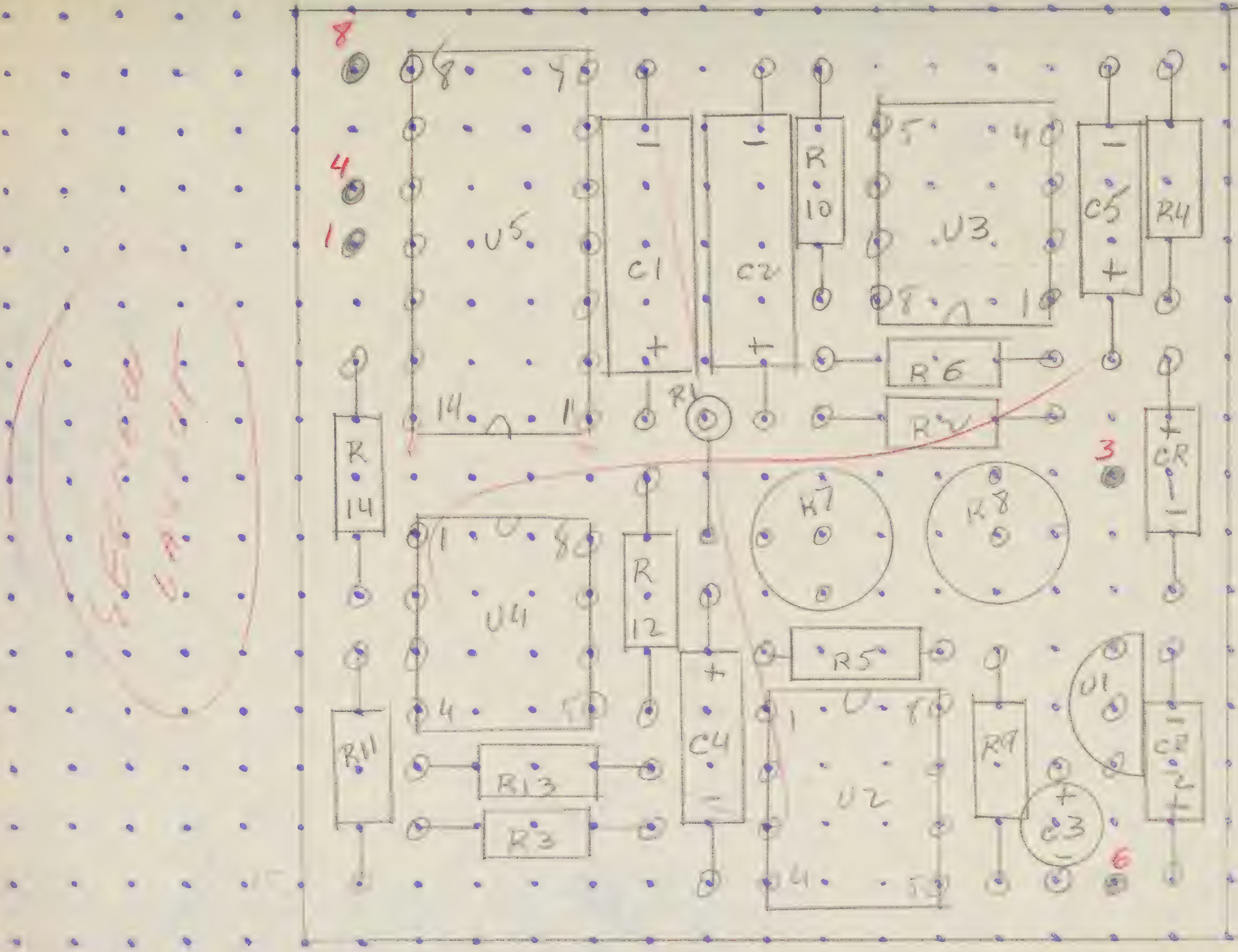




+VCC
441 HZ
359 HZ
6 HZ
46 HZ
1/2 4082
1/3 4073
1/2 4538
4081
4148
33K
330K
68K
10K
22 M
22 PF
220 K
1K
4.7
.15
.01
.001
AC
OUT VOLT.
28V
RESET
200 HZ.




T.P.B
T.P.A



8
4
1
U5
C1
C2
R 10
U3
C5
R4
R6
R7
R1
3
CR
R 14
K7
K8
U4
R 12
R5
U1
R11
R13
R3
C4
U2
R9
C3
CR 2
6

101774 2/1/85

Parko
ELECTRONICS CO., INC.
SANTA ANA, CALIFORNIA

PARTS LIST & TRACEABILITY RECORD

DATE 3-3-78 PARKO P/N 101722 CUSTOMER P/N ______ SHOP ORDER NO. ______

CUSTOMER & P.O. NO. ______ QTY ______ S/N ______ THRU ______

REF. DES.	P/N	DESCRIPTION	QTY PER UNIT	TOTAL QTY	INSP	MANUFACTURER	PARKO P.O. NO.	LOT
	20142	[illegible]	1					
	1085FR/90T – 85T – [illegible]		1					
	80178	P.C. BOARD	1					
	90420	[illegible]	1					
	ES160-1	POTTING-SILICON						
U1	MC7808ACP – IC. 8V. REGUL.		1			([illegible]) MOTOROLA [illegible]		
U2	TL091CP	I.C. OP. AMP.	1			T.I		
U3	TL091CP	I.C. OP. AMP	1			T.I		
U4	TL071CP	I.C. DUAL OP AMP	1			T.I		
U5	CD4066BCN-A+, I.C.-BILATERAL SWITCH		1			NATIONAL [illegible]		
CR1	1N4002	DIODE	1					
CR2	1N4746	DIODE ZENER 18V	1					
C1	196D225X9025HA1 – CAP-2.2/25V		1			SPRAGUE		

Parko
ELECTRONICS CO., INC.
SANTA ANA, CALIFORNIA

PARTS LIST & TRACEABILITY RECORD

DATE 3-31-61 PARKO P/N _____ CUSTOMER P/N _____ SHOP ORDER NO. _____

CUSTOMER & P.O. NO. _____ QTY _____ S/N _____ THRU _____

REF. DES.	P/N	DESCRIPTION	QTY PER UNIT	TOTAL QTY	INSP	MANUFACTURER	PARKO P.O. NO.	LOT
R1	RN55D1002F	RESISTOR 10K	1					
R2	RN55D1002F	RESISTOR 10K	1	2				
R3	RN55D9092F	RESISTOR 90.9K	1					
R4	RN55D9092F	RESISTOR 90.9K	1	2				
R5	3329H-1-100	POT 10K	1					
R6	3329H-1-100	POT 10K	1	2				
R7	RN70G1002F	RESIST 10K	1					
R8	RN70 "	RESIST 10K	1	2				
R9	RN70G5622F	RESIST 5.6K	1					
R10	RN70G1002F	RESIST 10K	1					

Parko
ELECTRONICS CO INC

PARTS LIST AND TRACEABILITY RECORD

Order: _____ Parko P/N 1617T2 Module, Bi-Temp Selector Qty: _____ S/O: _____

Ref. Des.	P/N:	Description	Unit Qty	Total Qty	Insp.	Manufacturer	Purch. P.O.
	20142	Enclosure	1				
	5017*	PC Board	1				
	1005FR/90T-03S	Header	1				
	9C420	Silkscreen	1				
	ES100-1	Potting-Silicon					
U1	MC78L05ACP	I.C. 5v Regulator	1			[illegible]	
U2, U3	TL091CP	I.C. Op-Amp	2			T.I.	
U4	TL092CP	I.C. Dual Op-Amp	1			T.I.	
U5	CD4066BCN-A*	I.C. Bilateral Switch	1			National or Equiv.	
CR1	1N4002	Diode	1				
CR2	1N4746	Diode Zener 18v	1				
~~—~~ C3	190D225X9025MA1	Capacitor, 2.2/25v	1			Sprague	
R3-R4-R12-R13 ~~R1,R2~~	RN55D1002F	Resistor, 10k	~~4~~				
~~R1,R2~~ R5-R6	RN55D9092F	Resistor, 90.9k	2				
~~R5,R6~~ R7-R8	3329H-1-104	Potentiometer, 100k	2			Bourns	
~~R7-R8~~ R9-R10	RC07F102JS	Resistor, 1k	2				
~~R9~~ R11	RC07G562JS	Resistor, 5.6k	1				
~~R10~~ R14	RC07G~~10~~475JS	Resistor, ~~10~~ Meg 4.7 "	1				

Parko
ELECTRONICS CO., INC.
SANTA ANA, CALIFORNIA

PARTS LIST & TRACEABILITY RECORD

DATE _____ PARKO P/N _____ CUSTOMER P/N _____ SHOP ORDER NO. _____

CUSTOMER & P.O. NO. _____ QTY _____ S/N _____ THRU _____

REF. DES.	P/N	DESCRIPTION	QTY PER UNIT	TOTAL QTY	INSP	MANUFACTURER	PARKO P.O. NO.	LOT
R1, R2	RC07GJ103	RES 10M	2					
C1, C2	CS13	CAP 56UUF	2					
C4, C5	CS13	CAP 100UF/25V	2					

Parko
ELECTRONICS CO., INC.

PARTS LIST AND TRACEABILITY RECORD

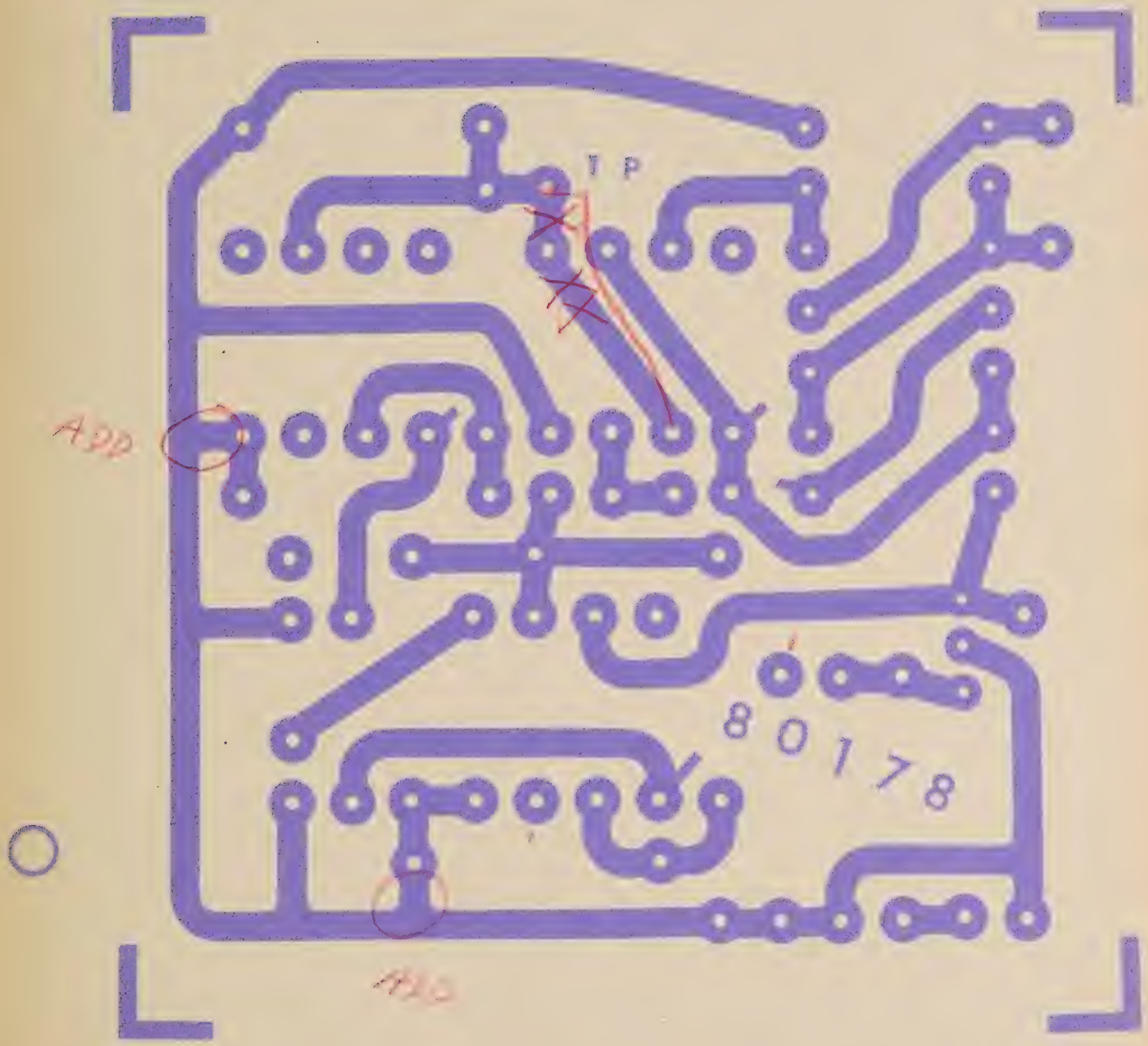
Date _____ Parko P/N 101772 Module, Hi-Temp Selector Qty. _____ S/O _____

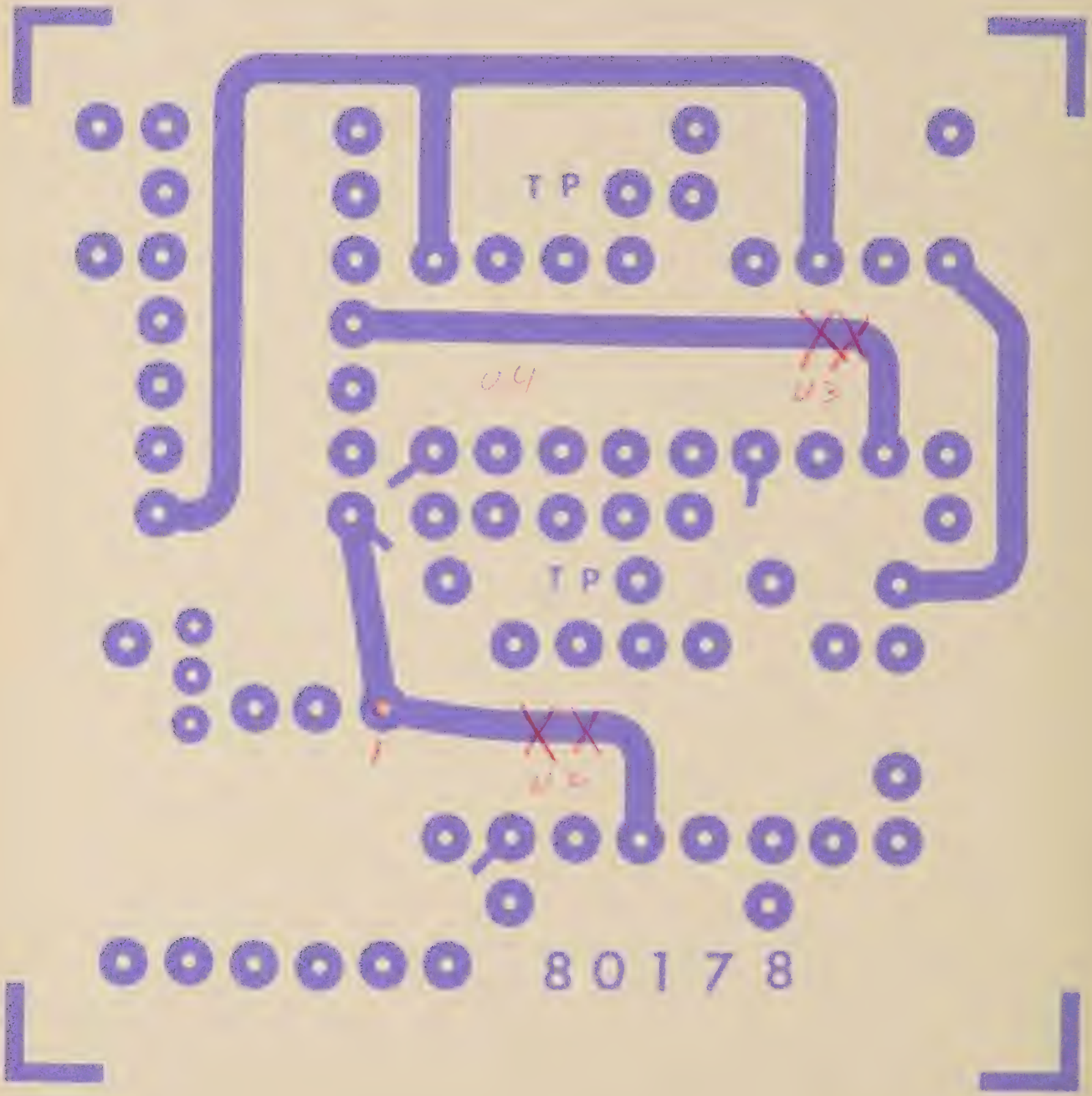
Ref. Des.	P/N	Description	Unit Qty	Total Qty	Insp	Manufacturer	Parko PO	Notes
	20142	Enclosure	1					
	80178	PCBoard	1					
	106SFR/90T-0S8	Header	1					
	90420	Silkscreen	1					
	ES160-1	Potting-Silicon						
U1	MC78L08ACP	I.C. 8v Regulator	1			(UA78L09AC-FC) ~~Motorola or equiv.~~		
U2, U3	TL091CP	I.C. Op-Amp	2			T.I.		
U4	TL092CP	I.C. Dual Op-Amp	1			T.I.		
U5	CD4066BCN-A+	I.C. Bilateral Switch	1			National or Equiv.		
CR1	IN4002	Diode	1					
CR2	IN4746	Diode Zener 18v	1					
C1	196D225X9025HA1	Capacitor, 2.2/25v	1			Sprague		
R1,R2	RN55D1002F	Resistor, 10k	2					
R3,R4	RN55D9092F	Resistor, 90.9k	2					
R5,R6	3329H-1-104	Potentiometer, 100k	2			Bourns		
R7,R8	RC07G102JS	Resistor, 1k	2					
R9	RC07G562JS	Resistor, 5.6k	1					
R10	RC07G106JS	Resistor, 10 Meg	1					

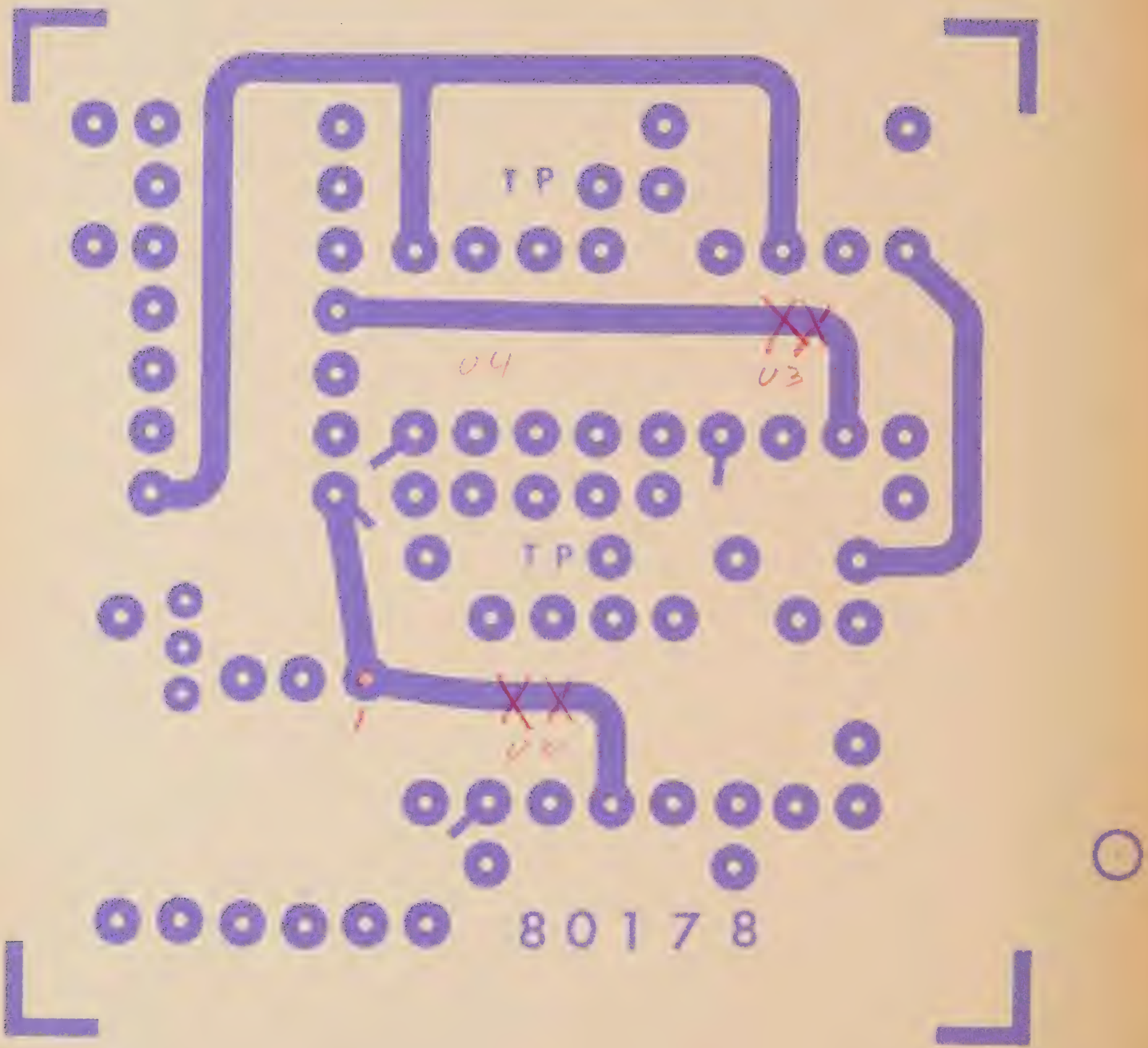
Ref. Desig.	Part	Description	Qty/Unit			Manufacturer		
R10	[illegible]	Resistor, 10 Meg	1					
R9	[illegible]	Resistor, 2.0k	1					
R7, R8	RC07GF102J	Resistor, 1k	2					
R5, R6	3299W-1-104	Potentiometer, 100k	2			Bourns		
R3, R4	[illegible]	Resistor, [illegible]	2					
R1, R2	[illegible]	Resistor, [illegible]	2					
C1	196D225X9025HA1	Capacitor, 2.2/25v	1			Sprague		
CR2	1N4746	Diode Zener 18v	1					
CR1	1N4003?	Diode	1					
U5	[illegible]	I.C. Bilateral Switch	1			National or Equiv.		
U4	[illegible]	I.C. Dual Op-Amp	1			" "		
U2, U3	[illegible]	I.C. Op-Amp	2			" "		
U1	[illegible]	I.C. Regulator	1			[illegible] (UA78L15AWC-FC)?		
	[illegible]	[illegible]						
	[illegible]	[illegible]	1					
	[illegible]	[illegible]	1					
	[illegible]	[illegible]	1					
	[illegible]	[illegible]	1					

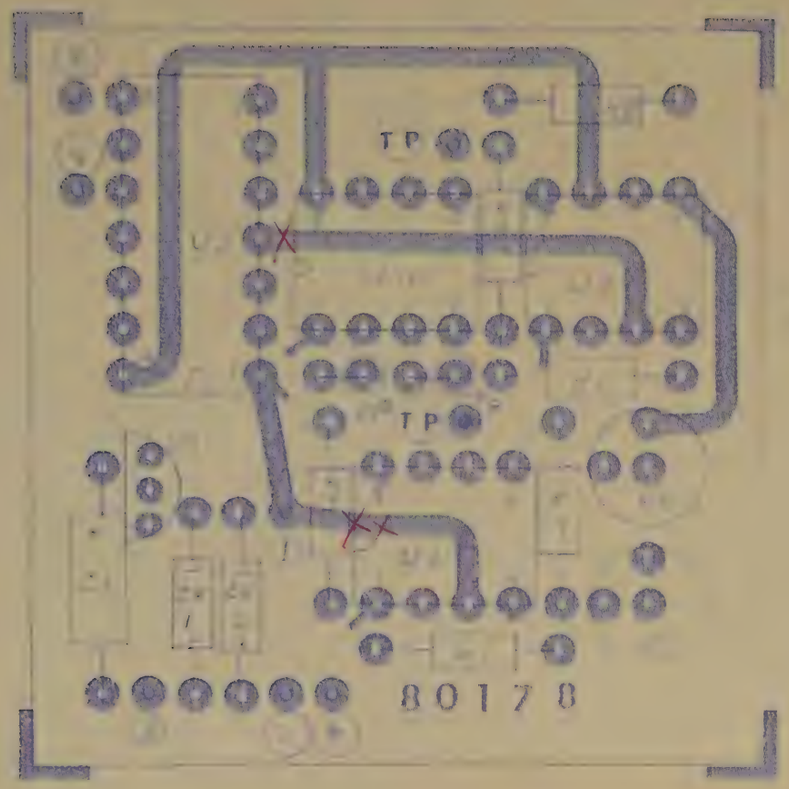
Date ______ Assy P/N [illegible] [illegible] ______

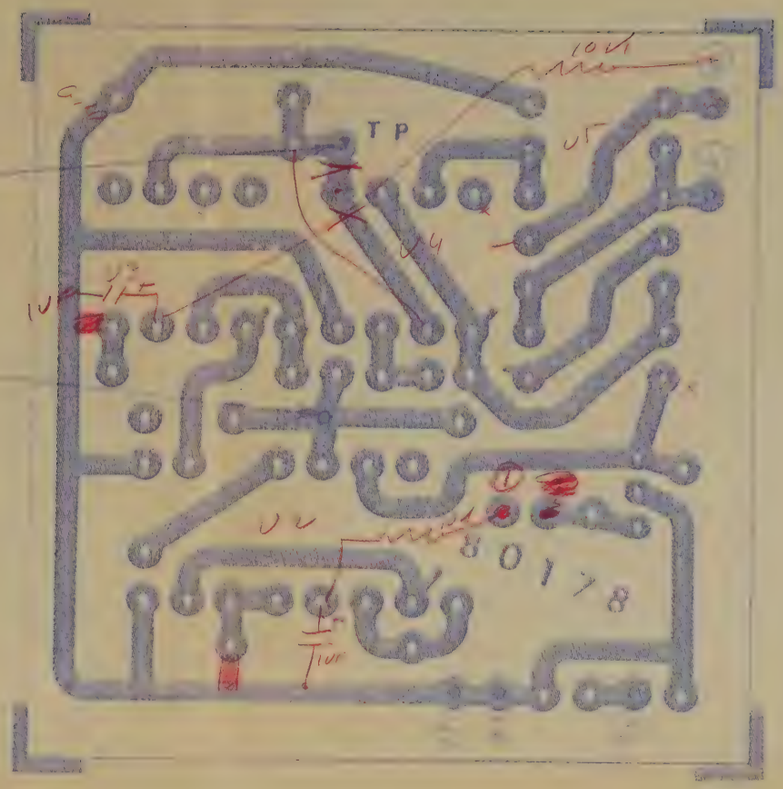
ELECTRONICS CO. INC. PARTS LIST AND TRACEABILITY RECORD Sheet 2 of 2

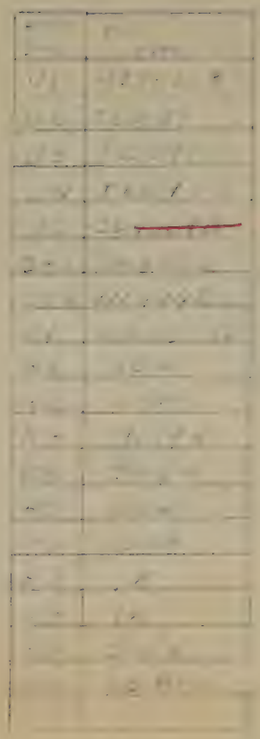

TP
ADD
80178
ADD

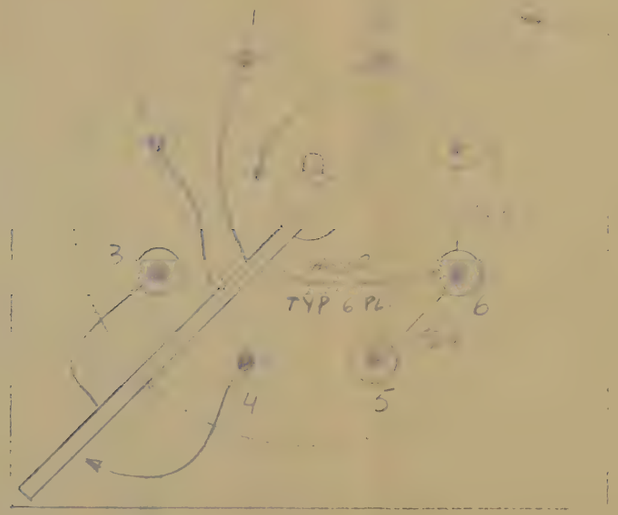

TP
TP
80178


TP
U4
U3
TP
80178









P.C. BOARD

N. G. -

CKT. MODIFIED AFTER UNITS WERE BUILT.

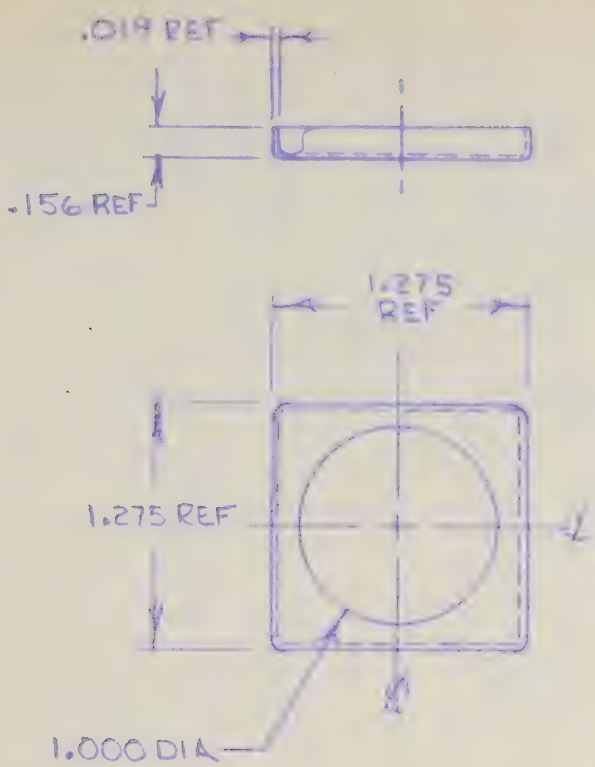
3. PARTS LIST: PL 101774
2. SCHEMATIC: 71773
1. TOP DRAWING: 101772
MATERIAL:

DIMENSIONS ARE IN INCHES AND AFTER PLATING	DR			Parko ELECTRONICS COMPANY INC., SANTA ANA, CALIF.
	CHK			
TOLERANCES (unless otherwise specified)	DSGN			HI-TEMP. (M.V.) SELECTOR MODULE
.X ±.1 .XX ±.03 .XXX±.010 ANGLES±0.5°	PROJ			
	REL			
MACH SURF ✓	APPROVED		CODE IDENT NO. 13979	SIZE 101774 REV
	APPROVED		SCALE 4:1	SHEET 1 OF 1
	DO NOT SCALE DRAWING			

101772

20142 = c/c #10211
Header = 9944
78L08ACP = 13216
091CP = 13218
092CP = 13218
4066 = 13216
IN4002 = 13377
IN4746 = 13216
T110 CS13 56/6V = 8853-15
1/35V = 14047
2.2/25V = 12398
100K pot = 13216
1K = 13880
5.6K = 13251
4.7meg = 10449-10
10K = 13882

Hand Wire instead of PCB.



-201 COVER

UNIT IN [illegible]
2.00 HAT

2 TOP DRAWING: ~~101229~~

1 FINISH: ~~BRIGHT ELECTRO~~ TIN PLATE PER MIL-T-10727A

NOTES:

QTY	DASH #	PART NO.	DESCRIPTION
1	201	HU-4440-C4-~~ST~~	COVER HUGSON
1		HU-4440-~~3.000~~-ST 1.727	CAN HUGSON

DIMENSIONS ARE IN INCHES AND AFTER PLATING

TOLERANCES (unless otherwise specified)
.X ±.1
.XX ±.03
.XXX ±.010
ANGLES ±0.5°
BREAK SHARP V

DR	Carol Dahlen	11-26-74
CHK	[illegible]	12-2-74
DSGN		
PRC		
REL	Carol Dahlen	12-4-74
	~~APPROVED~~	
	APPROVED	
DO NOT SCALE DRAWING		

Parko
ELECTRONICS COMPANY INC. SANTA ANA, CALIF.

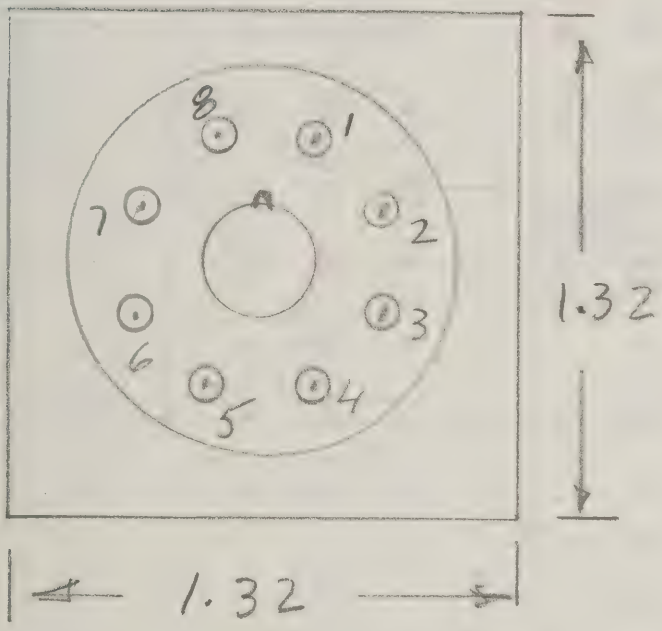
COVER MODIF & CAN
(HU-4440) 142

CODE IDENT NO.	SIZE	DWG NO.	REV
13979	A	20~~0~~22	

SCALE 1:1 SHEET 1 OF 1

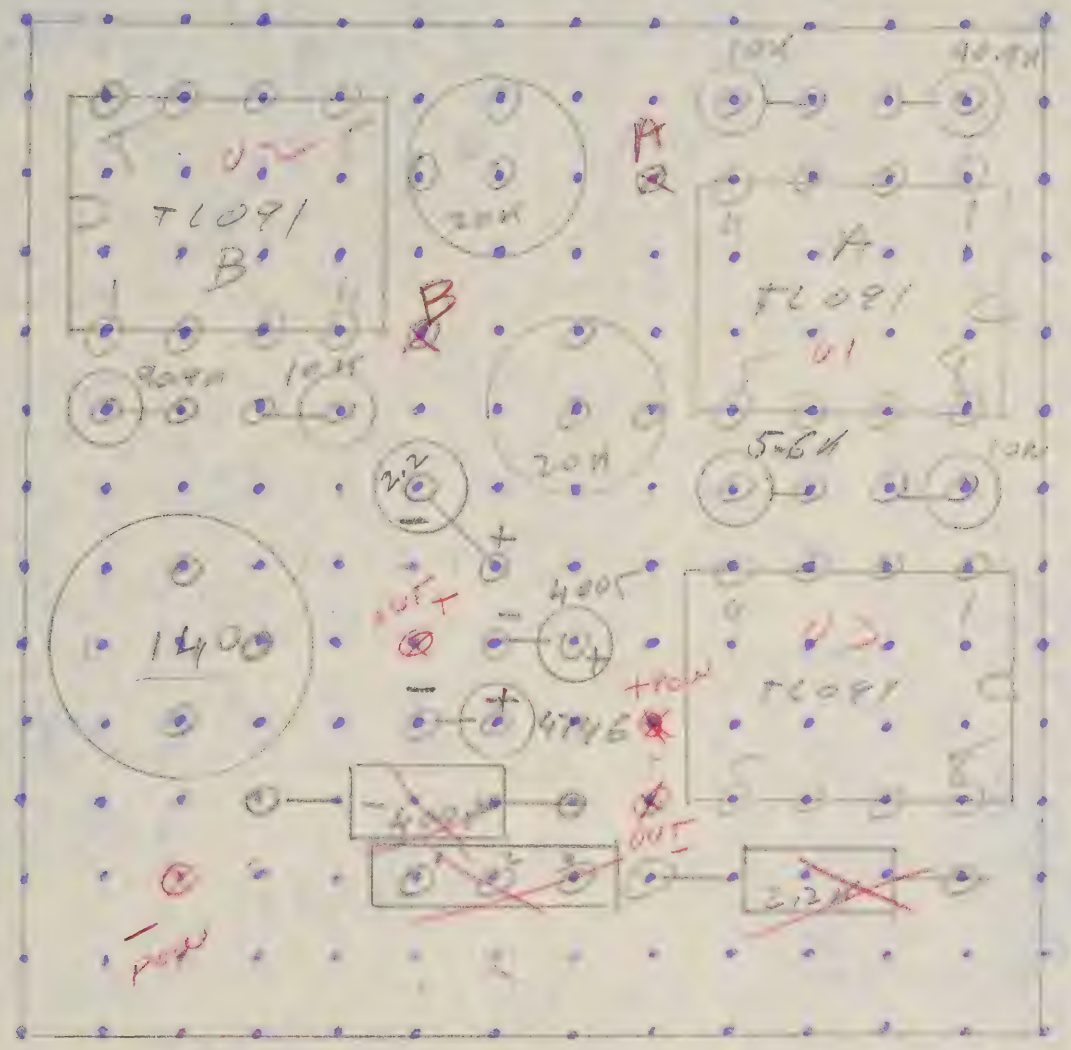
PIN CONNECTIONS

1. + } INPUT A
2. − }
3. +12VDC POWER
4. + OUTPUT METER
5. − OUTPUT METER
6. −12VDC POWER
7. − } INPUT B
8. + }

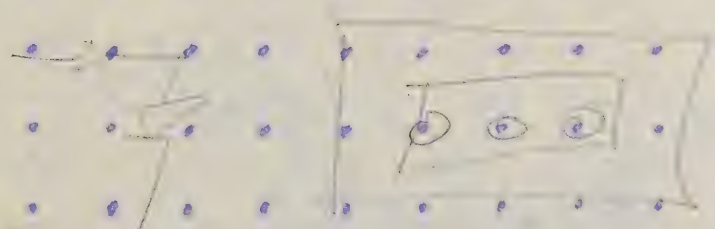


DIMENSIONS ARE IN INCHES AND AFTER PLATING	DR Coleman 2/23/15	**Parko** ELECTRONICS COMPANY INC., SANTA ANA, CALIF.	
TOLERANCES (unless otherwise specified) .X ±.1 .XX ±.03 .XXX±.010 ANGLES±0.5°	CHK	MV SERVICE MODULE	
	DSGN		
	PROJ		
	REL		
MACH SURF ✓	APPROVED	CODE IDENT NO. 13979 / SIZE A / 101772	REV
	APPROVED		
	DO NOT SCALE DRAWING	SCALE	SHEET OF

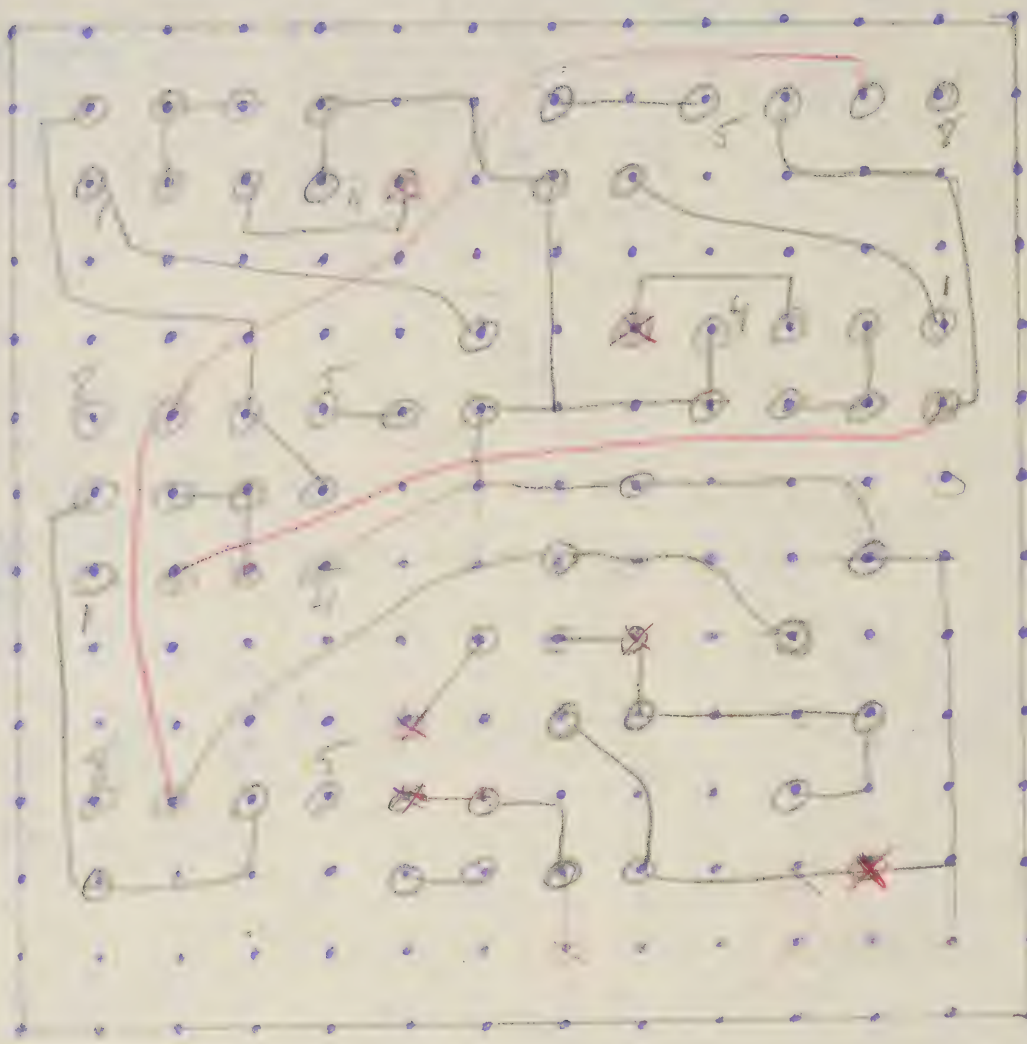
1017L



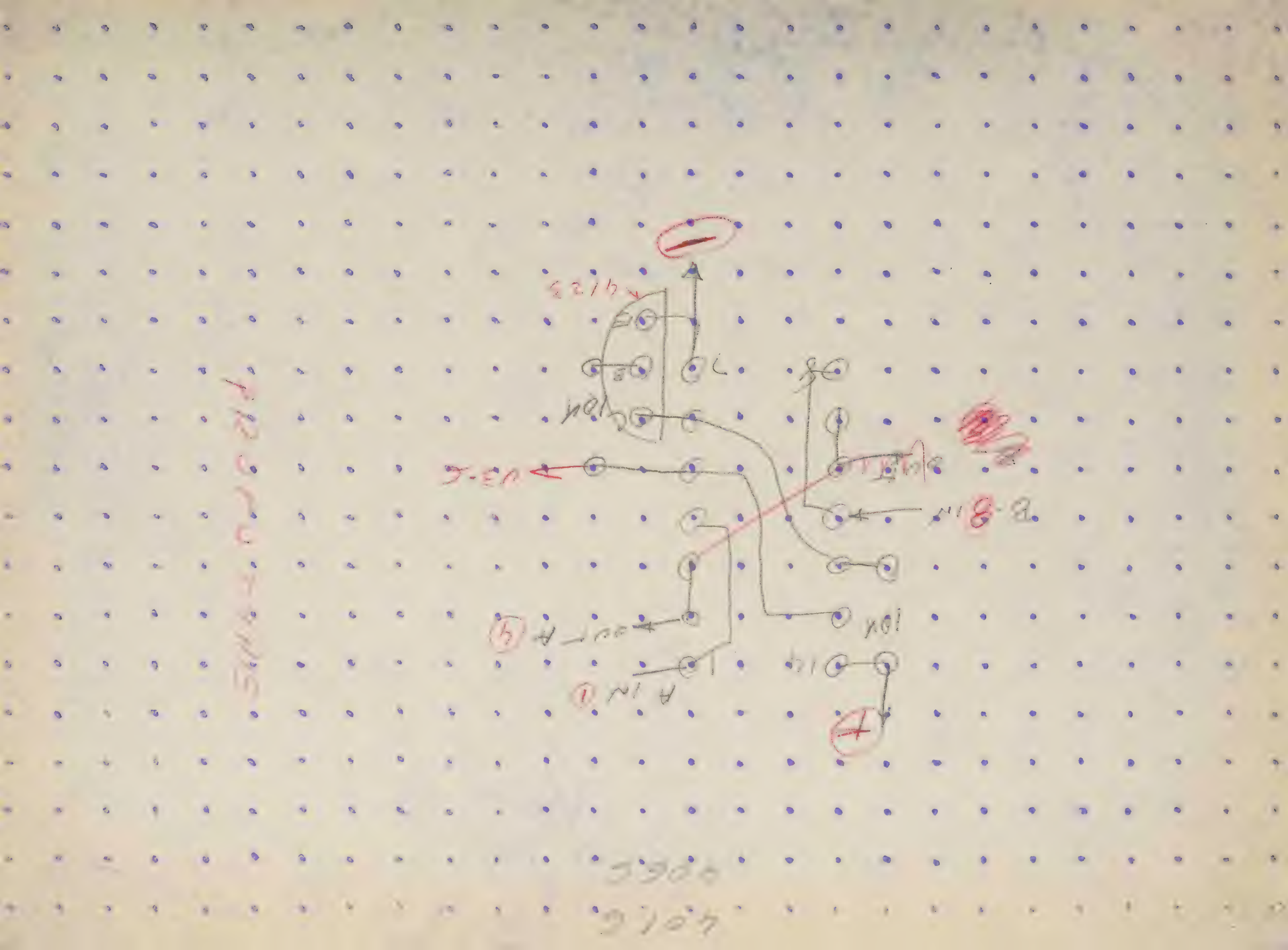
HEAT SINK.
THM (THERMALLOY)
#6041

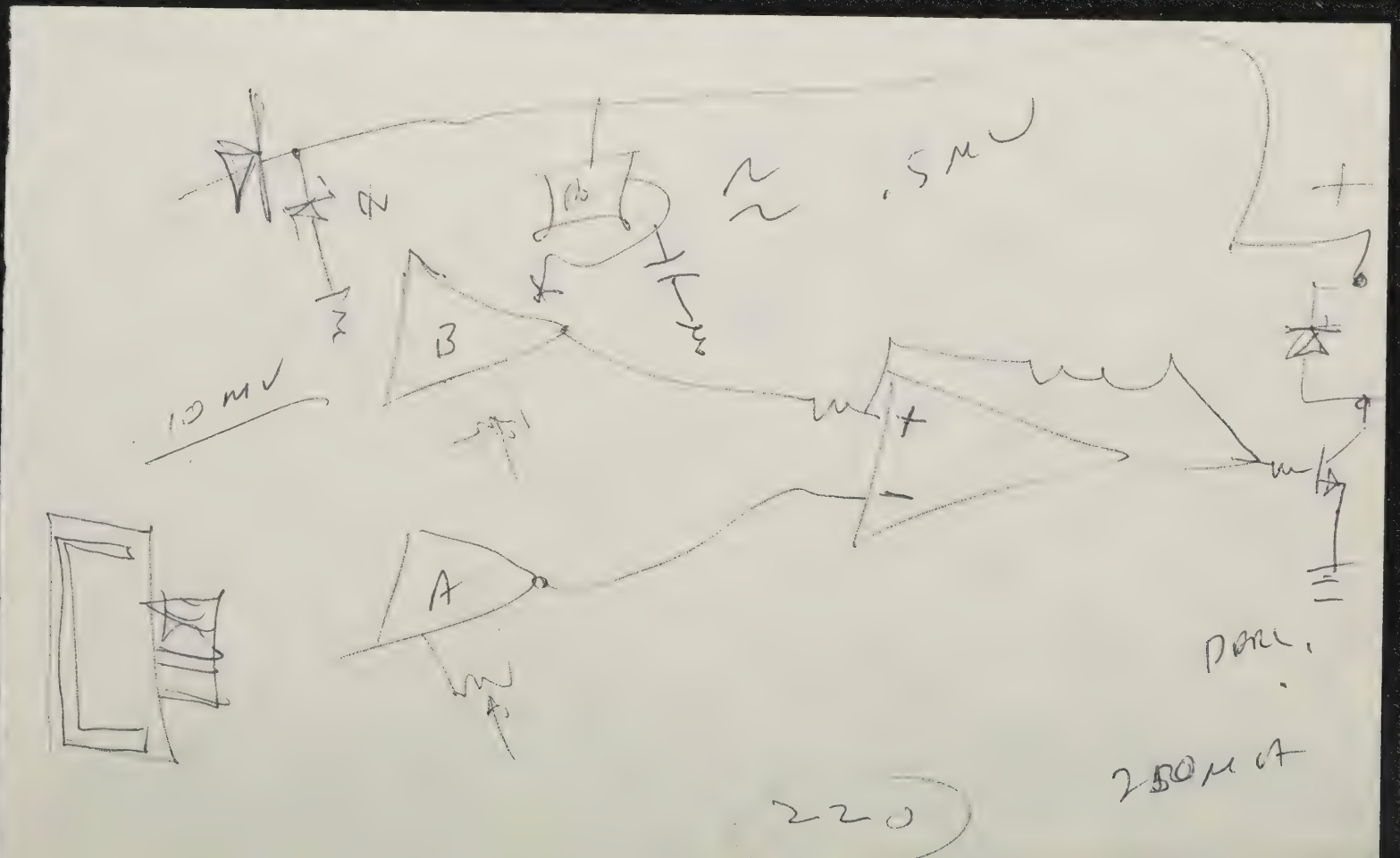


PRINTED WIRE BOARD



NOT AND FLIP FLOP WITH INV INPUT AND COMMON GAIN




B
A
+
-
10 mV
.5 mV
DARL.
250 mA
220

2 SP AMPS

2 WIRES T. C A

2 " " B

SET-UP AT 10 MV

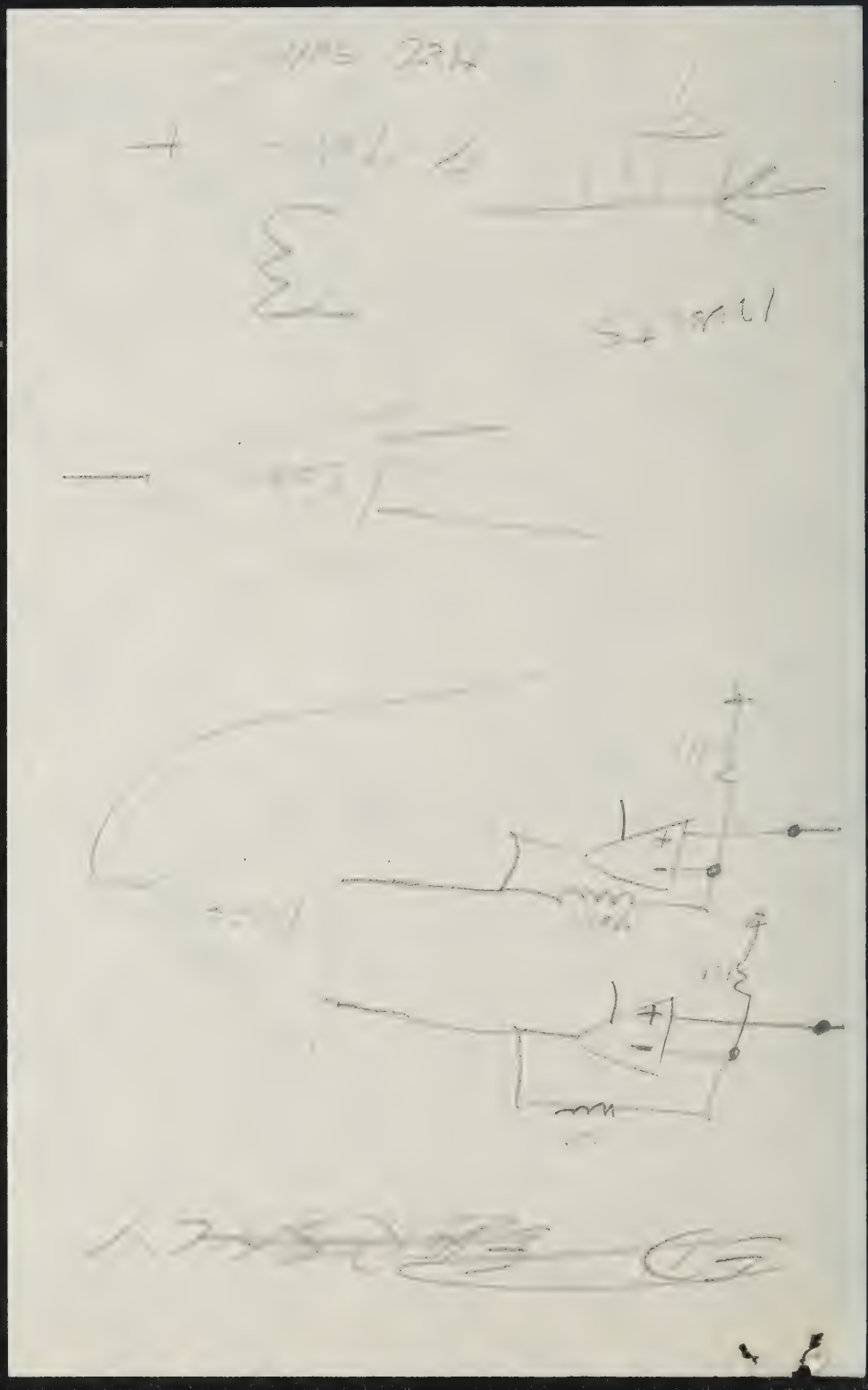
2 WORK POW.

2 WIRES FOR RELAY

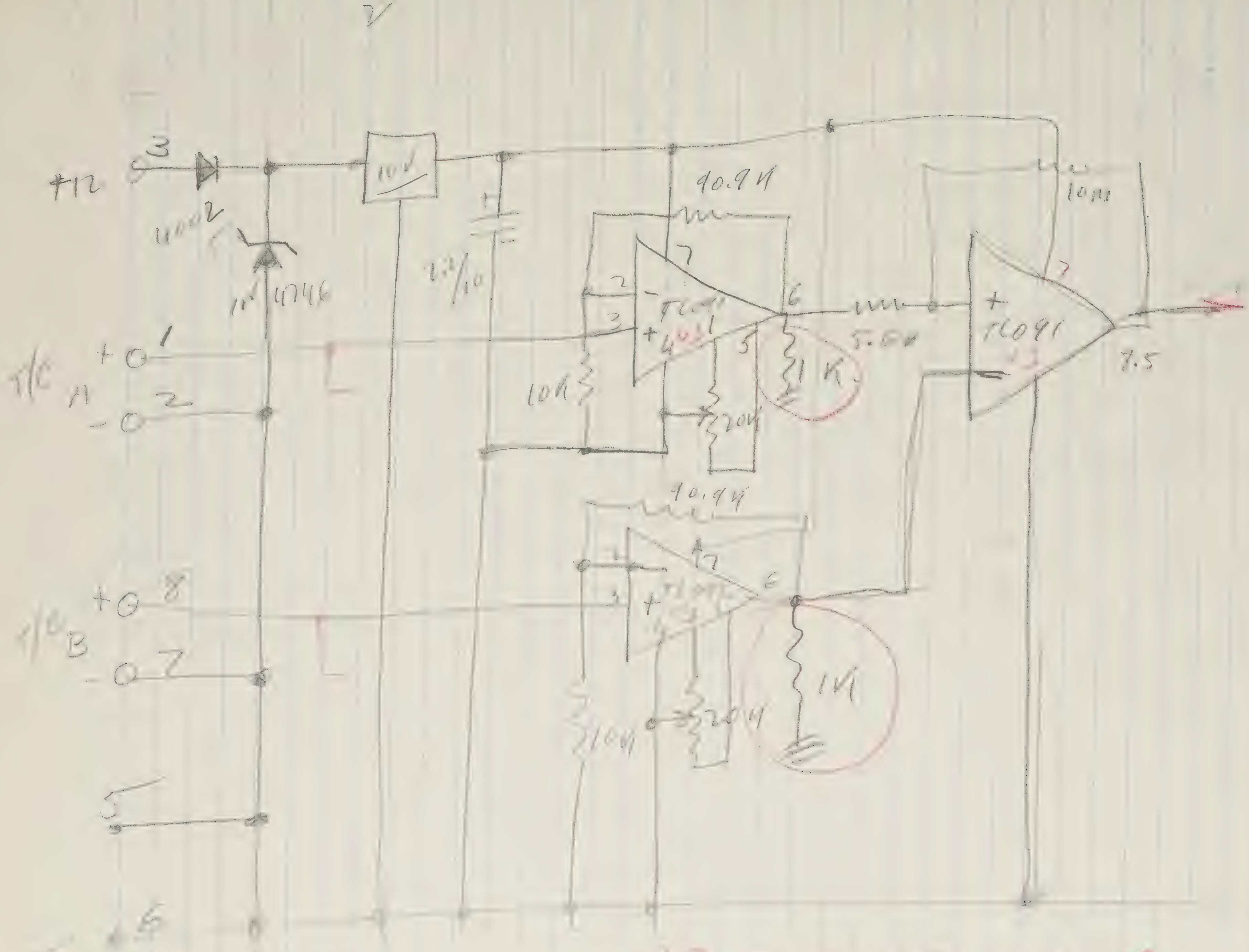
1 1/2 SEW CORD

1 " MIC

BASE FOR OCTAL



10772



PROTOTYPE UNIT 1

DP = 12
color 28

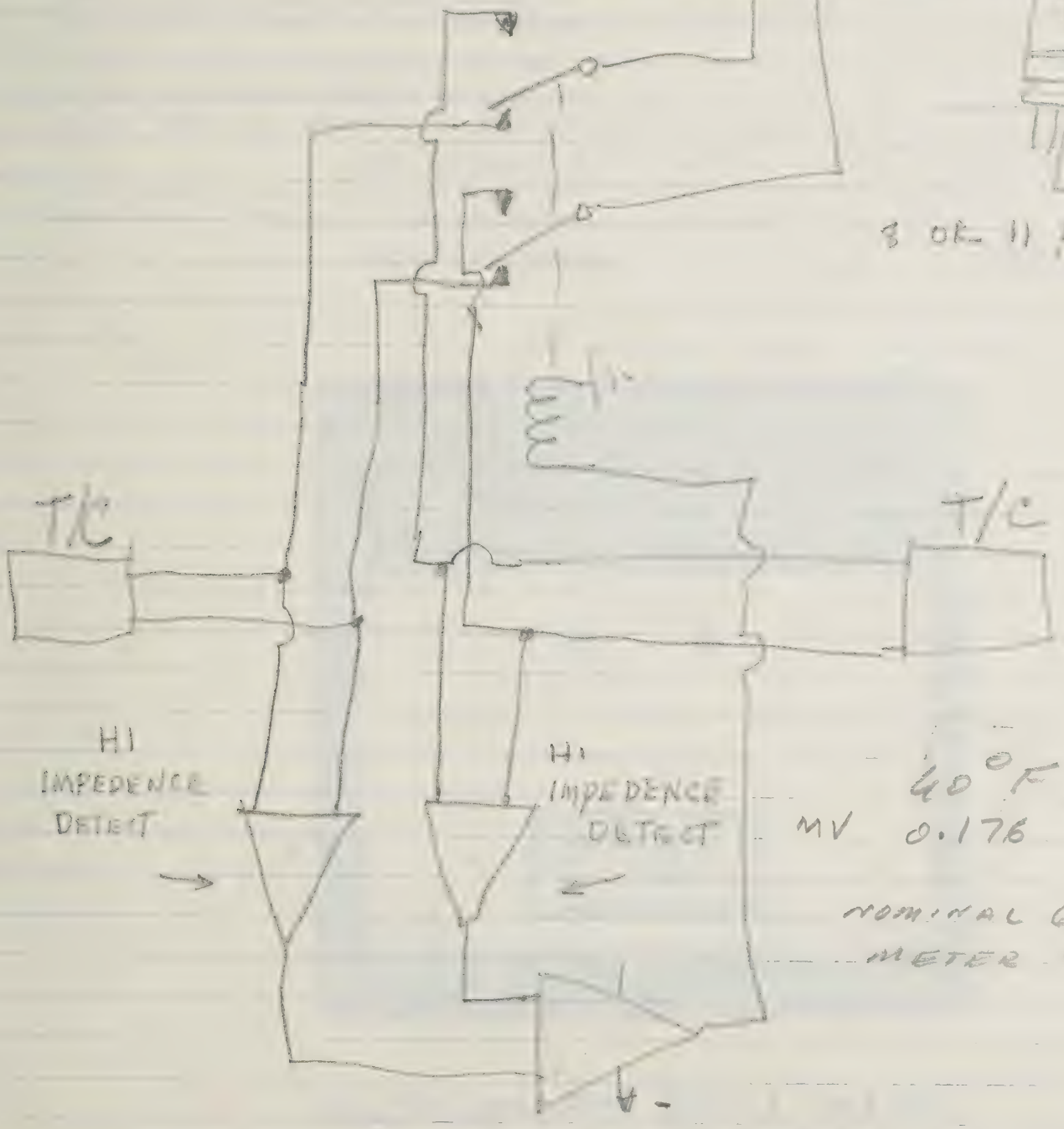
Ed. Yearsley
CRYOMEC
(714) 630-9300 EXT 62

METER

THE HIGHEST READING HERE

12 VOLT spiked
MANY OTHER CIRCUIT
Relays ON & OFF
INTERMITTANTLY

8 OR 11 PIN



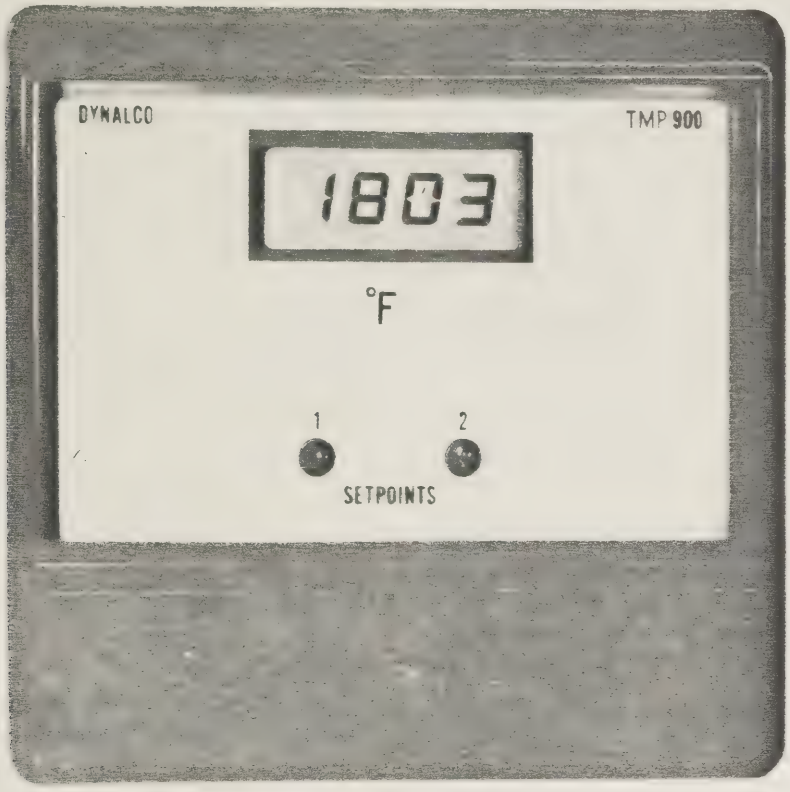
40°F TO 1000°F
MV 0.176 22.251

NOMINAL 600°–700°
METER SET.

VIBRATION
CONTACT DROP

Series TMP900

DIGITAL TEMPERATURE INDICATOR WITH TWO SETPOINTS



FUNCTION:

Digital display of temperature with two alarm setpoints. Converts standard thermocouple and RTD inputs into accurate digital temperature displays. Two independent relays transfer when preset temperature limits are exceeded.

USAGE:

Surveillance and or control of temperature within specified limits. Alarm and control of overtemperature and undertemperature. Protection of engines from costly failure. Measure the temperature of bearings, power cylinders, supercharger, compressor discharge, coolant, lubricant, valves, etc. Use in process control, instrumentation, machine tool, textile, food processing and other industries.

SIGNAL SOURCES:

Thermocouples, RTD's, thermistor probes, etc.

FEATURES:

- Rugged, lightweight (1 lb. max.), no meter movement, all solid state, two built-in alarm relays, gasketed-splash proof.
- Large (0.5" high characters) LCD display, contrast ratio increases with high ambient light—ideal for outdoor installation. Readout with 1° resolution.
- No compensation of lead lengths or lead resistances required; use inexpensive small gauge thermocouple extension wire and save money and space.
- Powered from 115 VAC, 24 VDC or 12 VDC.
- Front panel LED setpoint alarm lights.
- Built-in test signal to verify alarm setting and system checkout.
- Flexible: can be programmed for relay logic, latching option and alarm indication.
- High immunity to electrical noise and supply spikes.

SPECIFICATIONS:

Display: 3½ digit, 0.5" high LCD. Range capability of —1999 to +1999 in increments of 1. Readout update rate is once per second.

Sensor: Ungrounded thermocouple; integral cold junction compensation. Thermocouple extension wire resistance of up to 100 ohms introduces less than 1° error. Burned out thermocouple or open RTD indicated by a number 1 in the thousands column with all other digits blanked. With RTD's use heavy copper extension leads to minimize error, i.e. #16 AWG for up to 50 feet, #14 to 100 feet.

Ambient Temperature: 0°F to 165°F operating; 0.25% maximum change on readout or setpoint with 50°F change in ambient, —40°F to +180°F storage.

Power Requirement: 115 VAC ±10%, 50/60 Hz and/or any supply voltage between 9 VDC and 30 VDC. Maximum of 1.5 watts (AC) or 60 MA (DC).

Weight: 1 lb. max.

Setpoints: Adjustable with 20-turn infinite resolution potentiometers located under the snap-on bottom front cover. Relay contact rating of 5 amperes at 28 VDC or 115 VAC resistive. Nominal hysteresis (differential between pull-in and drop out) of 0.25% of full scale. Relays energize at temperatures above the setpoint when not otherwise specified. For each setpoint, solder jumpers on the back permit independent programming of:

1a) Alarm (LED turns on) on overtemperature.
1b) Alarm (LED turns on) on undertemperature.
2a) Energize relay on alarm.
2b) De-energize relay on alarm.
3a) Automatic reset (non-latching).
3b) Latch on alarm.

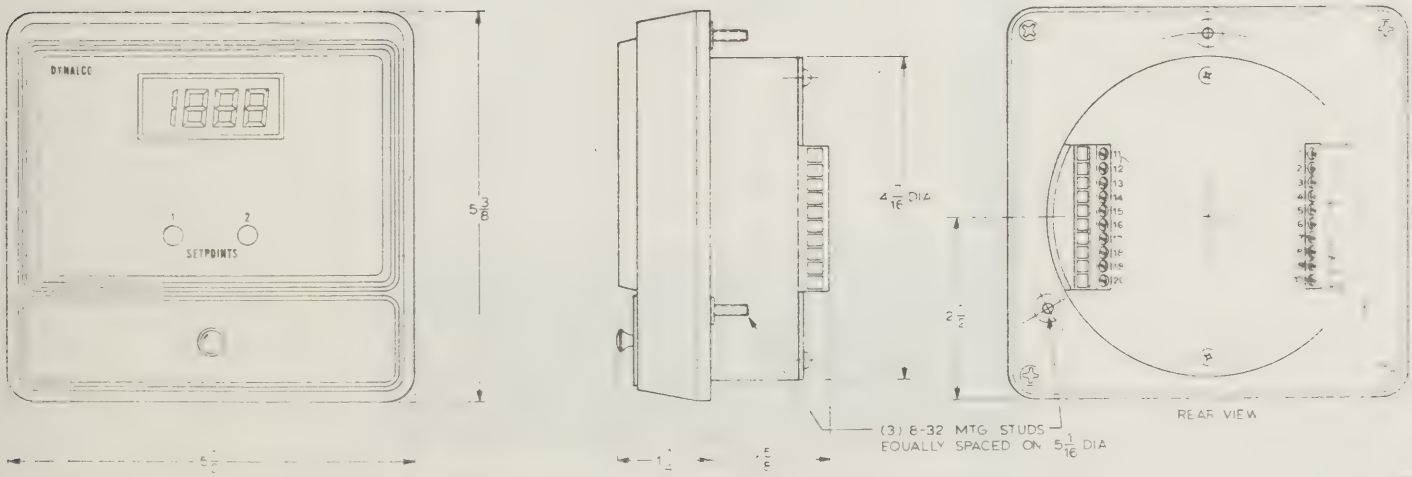
Relays set up in the latching mode require momentary jumpering of terminals 12 and 11 for reset. Terminal 11 is common to the power supply common. Relay response time is 100 milliseconds nominal.

Proportional Output: O-1 MA DC over zero degrees to full scale positive temperature at terminals 9 (+) and 10 (—) calibrated into a 40 ohm remote linearized meter. A remote meter calibration potentiometer is accessible under the snap-on bottom front cover. Terminal 10 is common to DC supply Terminal 5.

Integral Test Signal, Verify: Pressing the "Verify" push button introduces a test signal adjustable by the "Verify" potentiometer. This signal simulates an actual temperature signal and allows easy adjustment of the setpoint values.

Manual Controls: Accessible beneath the snap-on bottom front cover are: setpoint adjust controls, test verify controls, remote meter adjust potentiometer and the zero span calibration trimmers.

OUTLINE DIAGRAM



ELECTRICAL CONNECTIONS:

1 — Earth ground

2 — Hot
3 — Neutral
115 VAC, 50/60 Hz

4 — +
5 — —
9 to 30 VDC

7 — +
8 — —
Signal input*

9 — +
10 — —
Remote meter, 0-1 MA Proportional output

11 — Common
12 — Reset
Reset terminals (Latching mode only)

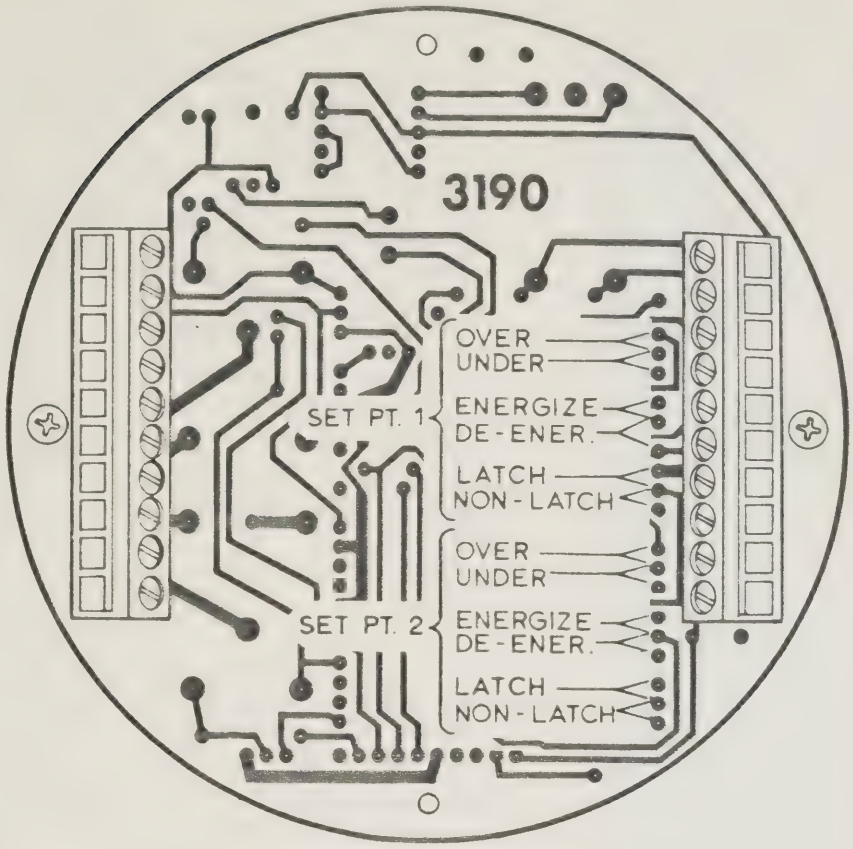
15 — N.O.
16 — C
17 — N.C.
Relay #1 Contacts

18 — N.O.
19 — C
20 — N.C.
Relay #2 Contacts

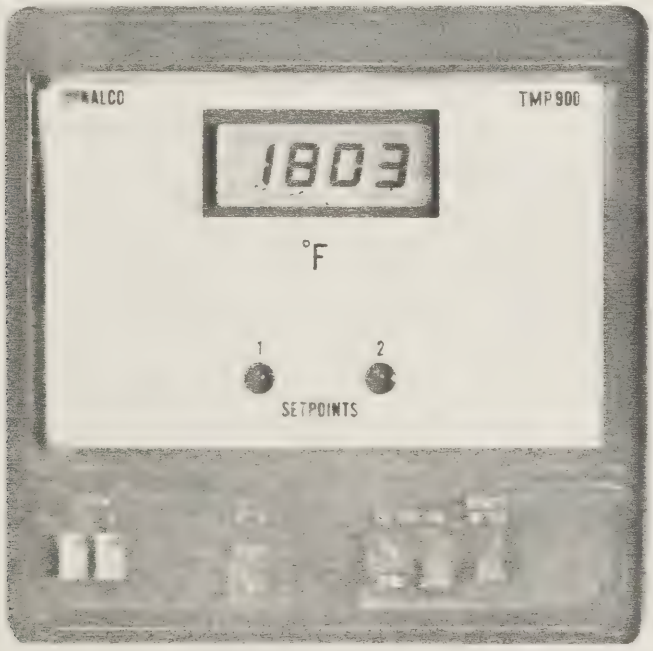
*(a) Route power line and relay connections separate from signal, meter and reset lines.

(b) For 3-wire RTD's connect single wire to 7, connect the other two wires to 8 and 6.

ALARM PROGRAMMING JUMPERS



REAR VIEW OF UNIT WITH COVER REMOVED



FRONT VIEW OF UNIT WITH COVER REMOVED

Part Numbers & Ranges		
P/N	Range	Thermocouple Type or Signal
TMP900-11	− 50 to +1500 F	J
TMP900-12	− 50 to + 800 C	J
TMP900-13	− 50 to +1800 F	K
TMP900-14	− 50 to +1000 C	K
TMP900-15	0 to + 500 F	T
TMP900-16	− 20 to + 250 C	T
TMP900-17	0 to + 500 F	E
TMP900-18	− 20 to − 250 C	E
TMP900-19	−300 to + 800 F	100 ohm Pt RTD
TMP900-20	−200 to + 400 C	100 ohm Pt RTD

HOW TO ORDER

1. Specify part number from table **and**:
2. Specify for each setpoint:
   (a) Overtemperature or undertemperature alarm.
   (b) Relay energizes or de-energizes on alarm.
   (c) Automatic reset or latching on alarm.
   (d) Any desired initial factory setting of setpoint.

   Example:

   1. TMP900-11
   2. Setpoint #1: overtemperature function, relay energizes, automatic reset, please set initially to 1100°F.

      Setpoint #2: overtemperature function, relay energizes and latches, please set to 1200°F.

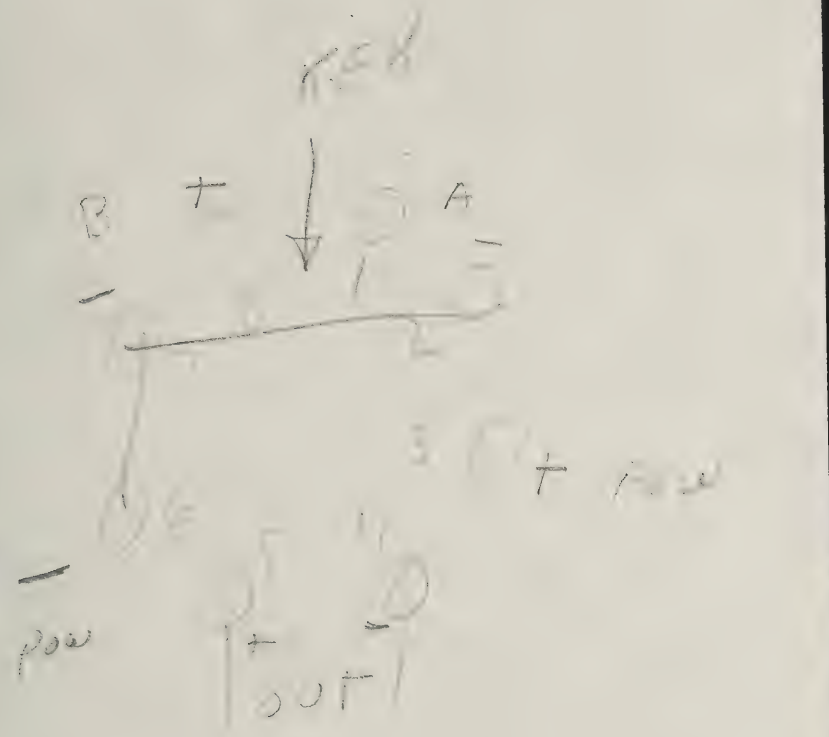

B
+
A
-
-
POW
+
OUT
-

TABLE IX

TYPE K

New Reference Tables
Supersedes N.B.S.
Circular #561

Nickel-Chromium Vs. Nickel-Aluminum

(Chromel-Alumel)

Temperature in Degrees F
Reference Junction at 32°F

THERMOELECTRIC VOLTAGE IN ABSOLUTE MILLIVOLTS

DEG F	0	1	2	3	4	5	6	7	8	9	10	DEG F
-450	-6.456	-6.456	-6.457	-6.457	-6.458							-450
-440	-6.447	-6.448	-6.449	-6.450	-6.451	-6.452	-6.453	-6.454	-6.454	-6.455	-6.456	-440
-430	-6.431	-6.433	-6.435	-6.436	-6.438	-6.440	-6.441	-6.443	-6.444	-6.445	-6.447	-430
-420	-6.409	-6.411	-6.414	-6.416	-6.419	-6.421	-6.423	-6.425	-6.427	-6.429	-6.431	-420
-410	-6.380	-6.383	-6.386	-6.389	-6.392	-6.395	-6.398	-6.401	-6.404	-6.406	-6.409	-410
-400	-6.344	-6.348	-6.352	-6.355	-6.359	-6.363	-6.366	-6.370	-6.373	-6.377	-6.380	-400
-390	-6.301	-6.306	-6.310	-6.315	-6.319	-6.323	-6.328	-6.332	-6.336	-6.340	-6.344	-390
-380	-6.251	-6.257	-6.262	-6.267	-6.272	-6.277	-6.282	-6.287	-6.292	-6.296	-6.301	-380
-370	-6.195	-6.201	-6.207	-6.213	-6.219	-6.224	-6.230	-6.235	-6.241	-6.246	-6.251	-370
-360	-6.133	-6.139	-6.146	-6.152	-6.158	-6.165	-6.171	-6.177	-6.183	-6.189	-6.195	-360
-350	-6.064	-6.071	-6.078	-6.085	-6.092	-6.099	-6.106	-6.113	-6.119	-6.126	-6.133	-350
-340	-5.989	-5.997	-6.004	-6.012	-6.020	-6.027	-6.035	-6.042	-6.049	-6.057	-6.064	-340
-330	-5.908	-5.917	-5.925	-5.933	-5.941	-5.949	-5.957	-5.965	-5.973	-5.981	-5.989	-330
-320	-5.822	-5.831	-5.839	-5.848	-5.857	-5.866	-5.874	-5.883	-5.891	-5.900	-5.908	-320
-310	-5.730	-5.739	-5.748	-5.758	-5.767	-5.776	-5.786	-5.795	-5.804	-5.813	-5.822	-310
-300	-5.632	-5.642	-5.652	-5.662	-5.672	-5.682	-5.691	-5.701	-5.711	-5.720	-5.730	-300
-290	-5.529	-5.540	-5.550	-5.561	-5.571	-5.581	-5.592	-5.602	-5.612	-5.622	-5.632	-290
-280	-5.421	-5.432	-5.443	-5.454	-5.465	-5.476	-5.487	-5.497	-5.508	-5.519	-5.529	-280
-270	-5.308	-5.319	-5.331	-5.342	-5.354	-5.365	-5.376	-5.388	-5.399	-5.410	-5.421	-270
-260	-5.190	-5.202	-5.214	-5.226	-5.238	-5.249	-5.261	-5.273	-5.285	-5.296	-5.308	-260
-250	-5.067	-5.079	-5.092	-5.104	-5.116	-5.129	-5.141	-5.153	-5.165	-5.178	-5.190	-250
-240	-4.939	-4.952	-4.965	-4.978	-4.990	-5.003	-5.016	-5.029	-5.041	-5.054	-5.067	-240
-230	-4.806	-4.819	-4.833	-4.846	-4.860	-4.873	-4.886	-4.899	-4.912	-4.926	-4.939	-230
-220	-4.669	-4.683	-4.697	-4.710	-4.724	-4.738	-4.752	-4.765	-4.779	-4.792	-4.806	-220
-210	-4.527	-4.541	-4.556	-4.570	-4.584	-4.598	-4.613	-4.627	-4.641	-4.655	-4.669	-210
-200	-4.381	-4.396	-4.410	-4.425	-4.440	-4.454	-4.469	-4.484	-4.498	-4.512	-4.527	-200
-190	-4.230	-4.245	-4.261	-4.276	-4.291	-4.306	-4.321	-4.336	-4.351	-4.366	-4.381	-190
-180	-4.075	-4.091	-4.107	-4.122	-4.138	-4.153	-4.169	-4.184	-4.200	-4.215	-4.230	-180
-170	-3.917	-3.933	-3.949	-3.965	-3.981	-3.997	-4.012	-4.028	-4.044	-4.060	-4.075	-170
-160	-3.754	-3.770	-3.787	-3.803	-3.819	-3.836	-3.852	-3.868	-3.884	-3.901	-3.917	-160
-150	-3.587	-3.604	-3.621	-3.637	-3.654	-3.671	-3.688	-3.704	-3.721	-3.737	-3.754	-150
-140	-3.417	-3.434	-3.451	-3.468	-3.485	-3.502	-3.519	-3.536	-3.553	-3.570	-3.587	-140
-130	-3.242	-3.260	-3.277	-3.295	-3.312	-3.330	-3.347	-3.365	-3.382	-3.399	-3.417	-130
-120	-3.065	-3.082	-3.100	-3.118	-3.136	-3.154	-3.172	-3.189	-3.207	-3.225	-3.242	-120
-110	-2.883	-2.902	-2.920	-2.938	-2.956	-2.974	-2.992	-3.010	-3.029	-3.047	-3.065	-110
-100	-2.699	-2.717	-2.736	-2.754	-2.773	-2.791	-2.810	-2.828	-2.847	-2.865	-2.883	-100
-90	-2.511	-2.530	-2.549	-2.567	-2.586	-2.605	-2.624	-2.643	-2.661	-2.680	-2.699	-90
-80	-2.320	-2.339	-2.358	-2.377	-2.397	-2.416	-2.435	-2.454	-2.473	-2.492	-2.511	-80
-70	-2.126	-2.145	-2.165	-2.184	-2.204	-2.223	-2.243	-2.262	-2.281	-2.300	-2.320	-70
-60	-1.929	-1.949	-1.968	-1.988	-2.008	-2.028	-2.047	-2.067	-2.087	-2.106	-2.126	-60
-50	-1.729	-1.749	-1.769	-1.789	-1.809	-1.829	-1.849	-1.869	-1.889	-1.909	-1.929	-50
-40	-1.527	-1.547	-1.567	-1.588	-1.608	-1.628	-1.648	-1.669	-1.689	-1.709	-1.729	-40
-30	-1.322	-1.342	-1.363	-1.383	-1.404	-1.424	-1.445	-1.465	-1.486	-1.506	-1.527	-30
-20	-1.114	-1.135	-1.156	-1.177	-1.197	-1.218	-1.239	-1.260	-1.280	-1.301	-1.322	-20
-10	-0.904	-0.925	-0.946	-0.968	-0.989	-1.010	-1.031	-1.051	-1.072	-1.093	-1.114	-10
0	-0.692	-0.714	-0.735	-0.756	-0.777	-0.799	-0.820	-0.841	-0.862	-0.883	-0.904	0
0	-0.692	-0.671	-0.650	-0.628	-0.607	-0.585	-0.564	-0.543	-0.521	-0.500	-0.478	0
10	-0.478	-0.457	-0.435	-0.413	-0.392	-0.370	-0.349	-0.327	-0.305	-0.284	-0.262	10
20	-0.262	-0.240	-0.218	-0.197	-0.175	-0.153	-0.131	-0.109	-0.088	-0.066	-0.044	20
30	-0.044	-0.022	0.000	0.022	0.044	0.066	0.088	0.110	0.132	0.154	0.176	30
40	0.176	0.198	0.220	0.242	0.264	0.286	0.308	0.331	0.353	0.375	0.397	40
50	0.397	0.419	0.441	0.464	0.486	0.508	0.530	0.553	0.575	0.597	0.619	50
60	0.619	0.642	0.664	0.686	0.709	0.731	0.753	0.776	0.798	0.821	0.843	60
70	0.843	0.865	0.888	0.910	0.933	0.955	0.978	1.000	1.023	1.045	1.068	70
80	1.068	1.090	1.113	1.135	1.158	1.181	1.203	1.226	1.248	1.271	1.294	80
90	1.294	1.316	1.339	1.362	1.384	1.407	1.430	1.452	1.475	1.498	1.520	90
100	1.520	1.543	1.566	1.589	1.611	1.634	1.657	1.680	1.703	1.725	1.748	100
110	1.748	1.771	1.794	1.817	1.839	1.862	1.885	1.908	1.931	1.954	1.977	110
120	1.977	2.000	2.022	2.045	2.068	2.091	2.114	2.137	2.160	2.183	2.206	120
130	2.206	2.229	2.252	2.275	2.298	2.321	2.344	2.367	2.390	2.413	2.436	130
140	2.436	2.459	2.482	2.505	2.528	2.551	2.574	2.597	2.620	2.643	2.666	140
150	2.666	2.689	2.712	2.735	2.758	2.781	2.804	2.827	2.850	2.873	2.896	150
160	2.896	2.920	2.943	2.966	2.989	3.012	3.035	3.058	3.081	3.104	3.127	160
170	3.127	3.150	3.173	3.196	3.220	3.243	3.266	3.289	3.312	3.335	3.358	170
180	3.358	3.381	3.404	3.427	3.450	3.473	3.496	3.519	3.543	3.566	3.589	180
190	3.589	3.612	3.635	3.658	3.681	3.704	3.727	3.750	3.773	3.796	3.819	190
200	3.819	3.842	3.865	3.888	3.911	3.934	3.957	3.980	4.003	4.026	4.049	200
210	4.049	4.072	4.095	4.118	4.141	4.164	4.187	4.210	4.233	4.256	4.279	210
220	4.279	4.302	4.325	4.348	4.371	4.394	4.417	4.439	4.462	4.485	4.508	220
230	4.508	4.531	4.554	4.577	4.600	4.622	4.645	4.668	4.691	4.714	4.737	230
240	4.737	4.759	4.782	4.805	4.828	4.851	4.873	4.896	4.919	4.942	4.964	240
250	4.964	4.987	5.010	5.033	5.055	5.078	5.101	5.124	5.146	5.169	5.192	250
260	5.192	5.214	5.237	5.260	5.282	5.305	5.327	5.350	5.373	5.395	5.418	260
270	5.418	5.440	5.463	5.486	5.508	5.531	5.553	5.576	5.598	5.621	5.643	270
280	5.643	5.666	5.688	5.711	5.733	5.756	5.778	5.801	5.823	5.846	5.868	280
290	5.868	5.891	5.913	5.936	5.958	5.980	6.003	6.025	6.048	6.070	6.092	290
300	6.092	6.115	6.137	6.160	6.182	6.204	6.227	6.249	6.271	6.294	6.316	300
310	6.316	6.338	6.361	6.383	6.405	6.428	6.450	6.472	6.494	6.517	6.539	310
320	6.539	6.561	6.583	6.606	6.628	6.650	6.672	6.695	6.717	6.739	6.761	320
330	6.761	6.784	6.806	6.828	6.850	6.873	6.895	6.917	6.939	6.961	6.984	330
340	6.984	7.006	7.028	7.050	7.072	7.094	7.117	7.139	7.161	7.183	7.205	340
350	7.205	7.228	7.250	7.272	7.294	7.316	7.338	7.361	7.383	7.405	7.427	350
360	7.427	7.449	7.471	7.494	7.516	7.538	7.560	7.582	7.604	7.627	7.649	360
370	7.649	7.671	7.693	7.715	7.737	7.760	7.782	7.804	7.826	7.848	7.870	370
380	7.870	7.893	7.915	7.937	7.959	7.981	8.003	8.026	8.048	8.070	8.092	380
390	8.092	8.114	8.137	8.159	8.181	8.203	8.225	8.248	8.270	8.292	8.314	390
400	8.314	8.336	8.359	8.381	8.403	8.425	8.448	8.470	8.492	8.514	8.537	400
410	8.537	8.559	8.581	8.603	8.626	8.648	8.670	8.692	8.715	8.737	8.759	410
420	8.759	8.782	8.804	8.826	8.849	8.871	8.893	8.916	8.938	8.960	8.983	420
430	8.983	9.005	9.027	9.050	9.072	9.094	9.117	9.139	9.161	9.184	9.206	430
440	9.206	9.229	9.251	9.273	9.296	9.318	9.341	9.363	9.385	9.408	9.430	440
450	9.430	9.453	9.475	9.498	9.520	9.543	9.565	9.588	9.610	9.633	9.655	450
460	9.655	9.678	9.700	9.723	9.745	9.768	9.790	9.813	9.835	9.858	9.880	460
470	9.880	9.903	9.926	9.948	9.971	9.993	10.016	10.038	10.061	10.084	10.106	470
480	10.106	10.129	10.151	10.174	10.197	10.219	10.242	10.265	10.287	10.310	10.333	480
490	10.333	10.355	10.378	10.401	10.423	10.446	10.469	10.491	10.514	10.537	10.560	490
500	10.560	10.582	10.605	10.628	10.650	10.673	10.696	10.719	10.741	10.764	10.787	500
510	10.787	10.810	10.833	10.855	10.878	10.901	10.924	10.947	10.969	10.992	11.015	510
520	11.015	11.038	11.061	11.083	11.106	11.129	11.152	11.175	11.198	11.221	11.243	520
530	11.243	11.266	11.289	11.312	11.335	11.358	11.381	11.404	11.426	11.449	11.472	530
540	11.472	11.495	11.518	11.541	11.564	11.587	11.610	11.633	11.656	11.679	11.702	540

DEG F	0	1	2	3	4	5	6	7	8	9	10	DEG F

CONVERTED FROM DEGREES CIIPTS 1968).

TABLE IX —Continued

TYPE K

New Reference Tables
Supersedes N.B.S.
Circular #561

Nickel-Chromium Vs. Nickel-Aluminum

(Chromel-Alumel)

Temperature in Degrees F
Reference Junction at 32°F

THERMOELECTRIC VOLTAGE IN ABSOLUTE MILLIVOLTS

DEG F	0	1	2	3	4	5	6	7	8	9	10	DEG F
550	11.702	11.725	11.748	11.770	11.793	11.816	11.839	11.862	11.885	11.908	11.931	550
560	11.931	11.954	11.977	12.000	12.023	12.046	12.069	12.092	12.115	12.138	12.161	560
570	12.161	12.184	12.207	12.230	12.254	12.277	12.300	12.323	12.346	12.369	12.392	570
580	12.392	12.415	12.438	12.461	12.484	12.507	12.530	12.553	12.576	12.599	12.623	580
590	12.623	12.646	12.669	12.692	12.715	12.738	12.761	12.784	12.807	12.831	12.854	590
600	12.854	12.877	12.900	12.923	12.946	12.969	12.992	13.016	13.039	13.062	13.085	600
610	13.085	13.108	13.131	13.154	13.178	13.201	13.224	13.247	13.270	13.293	13.317	610
620	13.317	13.340	13.363	13.386	13.409	13.433	13.456	13.479	13.502	13.525	13.549	620
630	13.549	13.572	13.595	13.618	13.641	13.665	13.688	13.711	13.734	13.757	13.781	630
640	13.781	13.804	13.827	13.850	13.874	13.897	13.920	13.943	13.967	13.990	14.013	640
650	14.013	14.036	14.060	14.083	14.106	14.129	14.153	14.176	14.199	14.222	14.246	650
660	14.246	14.269	14.292	14.316	14.339	14.362	14.385	14.409	14.432	14.455	14.479	660
670	14.479	14.502	14.525	14.548	14.572	14.595	14.618	14.642	14.665	14.688	14.712	670
680	14.712	14.735	14.758	14.782	14.805	14.828	14.852	14.875	14.898	14.922	14.945	680
690	14.945	14.968	14.992	15.015	15.038	15.062	15.085	15.108	15.132	15.155	15.178	690
700	15.178	15.202	15.225	15.248	15.272	15.295	15.318	15.342	15.365	15.389	15.412	700
710	15.412	15.435	15.459	15.482	15.505	15.529	15.552	15.576	15.599	15.622	15.646	710
720	15.646	15.669	15.693	15.716	15.739	15.763	15.786	15.810	15.833	15.856	15.880	720
730	15.880	15.903	15.927	15.950	15.974	15.997	16.020	16.044	16.067	16.091	16.114	730
740	16.114	16.138	16.161	16.184	16.208	16.231	16.255	16.278	16.302	16.325	16.349	740
750	16.349	16.372	16.395	16.419	16.442	16.466	16.489	16.513	16.536	16.560	16.583	750
760	16.583	16.607	16.630	16.654	16.677	16.700	16.724	16.747	16.771	16.794	16.818	760
770	16.818	16.841	16.865	16.888	16.912	16.935	16.959	16.982	17.006	17.029	17.053	770
780	17.053	17.076	17.100	17.123	17.147	17.170	17.194	17.217	17.241	17.264	17.288	780
790	17.288	17.311	17.335	17.358	17.382	17.406	17.429	17.453	17.476	17.500	17.523	790
800	17.523	17.547	17.570	17.594	17.617	17.641	17.664	17.688	17.711	17.735	17.759	800
810	17.759	17.782	17.806	17.829	17.853	17.876	17.900	17.923	17.947	17.971	17.994	810
820	17.994	18.018	18.041	18.065	18.088	18.112	18.136	18.159	18.183	18.206	18.230	820
830	18.230	18.253	18.277	18.301	18.324	18.348	18.371	18.395	18.418	18.442	18.466	830
840	18.466	18.489	18.513	18.536	18.560	18.584	18.607	18.631	18.654	18.678	18.702	840
850	18.702	18.725	18.749	18.772	18.796	18.820	18.843	18.867	18.890	18.914	18.938	850
860	18.938	18.961	18.985	19.008	19.032	19.056	19.079	19.103	19.127	19.150	19.174	860
870	19.174	19.197	19.221	19.245	19.268	19.292	19.316	19.339	19.363	19.386	19.410	870
880	19.410	19.434	19.457	19.481	19.505	19.528	19.552	19.576	19.599	19.623	19.646	880
890	19.646	19.670	19.694	19.717	19.741	19.765	19.788	19.812	19.836	19.859	19.883	890
900	19.883	19.907	19.930	19.954	19.978	20.001	20.025	20.049	20.072	20.096	20.120	900
910	20.120	20.143	20.167	20.190	20.214	20.238	20.261	20.285	20.309	20.332	20.356	910
920	20.356	20.380	20.403	20.427	20.451	20.474	20.498	20.522	20.545	20.569	20.593	920
930	20.593	20.616	20.640	20.664	20.688	20.711	20.735	20.759	20.782	20.806	20.830	930
940	20.830	20.853	20.877	20.901	20.924	20.948	20.972	20.995	21.019	21.043	21.066	940
950	21.066	21.090	21.114	21.137	21.161	21.185	21.208	21.232	21.256	21.280	21.303	950
960	21.303	21.327	21.351	21.374	21.398	21.422	21.445	21.469	21.493	21.516	21.540	960
970	21.540	21.564	21.587	21.611	21.635	21.659	21.682	21.706	21.730	21.753	21.777	970
980	21.777	21.801	21.824	21.848	21.872	21.895	21.919	21.943	21.966	21.990	22.014	980
990	22.014	22.038	22.061	22.085	22.109	22.132	22.156	22.180	22.203	22.227	22.251	990
1,000	22.251	22.274	22.298	22.322	22.346	22.369	22.393	22.417	22.440	22.464	22.488	1,000
1,010	22.488	22.511	22.535	22.559	22.582	22.606	22.630	22.654	22.677	22.701	22.725	1,010
1,020	22.725	22.748	22.772	22.796	22.819	22.843	22.867	22.890	22.914	22.938	22.961	1,020
1,030	22.961	22.985	23.009	23.032	23.056	23.080	23.104	23.127	23.151	23.175	23.198	1,030
1,040	23.198	23.222	23.246	23.269	23.293	23.317	23.340	23.364	23.388	23.411	23.435	1,040
1,050	23.435	23.459	23.482	23.506	23.530	23.553	23.577	23.601	23.624	23.648	23.672	1,050
1,060	23.672	23.695	23.719	23.743	23.766	23.790	23.814	23.837	23.861	23.885	23.908	1,060
1,070	23.908	23.932	23.956	23.979	24.003	24.027	24.050	24.074	24.098	24.121	24.145	1,070
1,080	24.145	24.169	24.192	24.216	24.240	24.263	24.287	24.311	24.334	24.358	24.382	1,080
1,090	24.382	24.405	24.429	24.453	24.476	24.500	24.523	24.547	24.571	24.594	24.618	1,090
1,100	24.618	24.642	24.665	24.689	24.713	24.736	24.760	24.783	24.807	24.831	24.854	1,100
1,110	24.854	24.878	24.902	24.925	24.949	24.972	24.996	25.020	25.043	25.067	25.091	1,110
1,120	25.091	25.114	25.138	25.161	25.185	25.209	25.232	25.256	25.279	25.303	25.327	1,120
1,130	25.327	25.350	25.374	25.397	25.421	25.445	25.468	25.492	25.515	25.539	25.563	1,130
1,140	25.563	25.586	25.610	25.633	25.657	25.681	25.704	25.728	25.751	25.775	25.799	1,140
1,150	25.799	25.822	25.846	25.869	25.893	25.916	25.940	25.964	25.987	26.011	26.034	1,150
1,160	26.034	26.058	26.081	26.105	26.128	26.152	26.176	26.199	26.223	26.246	26.270	1,160
1,170	26.270	26.293	26.317	26.340	26.364	26.387	26.411	26.435	26.458	26.482	26.505	1,170
1,180	26.505	26.529	26.552	26.576	26.599	26.623	26.646	26.670	26.693	26.717	26.740	1,180
1,190	26.740	26.764	26.787	26.811	26.834	26.858	26.881	26.905	26.928	26.952	26.975	1,190
1,200	26.975	26.999	27.022	27.046	27.069	27.093	27.116	27.140	27.163	27.187	27.210	1,200
1,210	27.210	27.234	27.257	27.281	27.304	27.328	27.351	27.375	27.398	27.422	27.445	1,210
1,220	27.445	27.468	27.492	27.515	27.539	27.562	27.586	27.609	27.633	27.656	27.679	1,220
1,230	27.679	27.703	27.726	27.750	27.773	27.797	27.820	27.843	27.867	27.890	27.914	1,230
1,240	27.914	27.937	27.961	27.984	28.007	28.031	28.054	28.078	28.101	28.124	28.148	1,240
1,250	28.148	28.171	28.195	28.218	28.241	28.265	28.288	28.311	28.335	28.358	28.382	1,250
1,260	28.382	28.405	28.428	28.452	28.475	28.498	28.522	28.545	28.569	28.592	28.615	1,260
1,270	28.615	28.639	28.662	28.685	28.709	28.732	28.755	28.779	28.802	28.825	28.849	1,270
1,280	28.849	28.872	28.895	28.919	28.942	28.965	28.988	29.012	29.035	29.058	29.082	1,280
1,290	29.082	29.105	29.128	29.152	29.175	29.198	29.221	29.245	29.268	29.291	29.315	1,290
1,300	29.315	29.338	29.361	29.384	29.408	29.431	29.454	29.477	29.501	29.524	29.547	1,300
1,310	29.547	29.570	29.594	29.617	29.640	29.663	29.687	29.710	29.733	29.756	29.780	1,310
1,320	29.780	29.803	29.826	29.849	29.872	29.896	29.919	29.942	29.965	29.989	30.012	1,320
1,330	30.012	30.035	30.058	30.081	30.104	30.128	30.151	30.174	30.197	30.220	30.244	1,330
1,340	30.244	30.267	30.290	30.313	30.336	30.359	30.383	30.406	30.429	30.452	30.475	1,340
1,350	30.475	30.498	30.521	30.545	30.568	30.591	30.614	30.637	30.660	30.683	30.706	1,350
1,360	30.706	30.730	30.753	30.776	30.799	30.822	30.845	30.868	30.891	30.914	30.937	1,360
1,370	30.937	30.961	30.984	31.007	31.030	31.053	31.076	31.099	31.122	31.145	31.168	1,370
1,380	31.168	31.191	31.214	31.237	31.260	31.283	31.306	31.329	31.353	31.376	31.399	1,380
1,390	31.399	31.422	31.445	31.468	31.491	31.514	31.537	31.560	31.583	31.606	31.629	1,390
1,400	31.629	31.652	31.675	31.698	31.721	31.744	31.767	31.790	31.813	31.836	31.859	1,400
1,410	31.859	31.882	31.905	31.927	31.950	31.973	31.996	32.019	32.042	32.065	32.088	1,410
1,420	32.088	32.111	32.134	32.157	32.180	32.203	32.226	32.249	32.272	32.294	32.317	1,420
1,430	32.317	32.340	32.363	32.386	32.409	32.432	32.455	32.478	32.501	32.523	32.546	1,430
1,440	32.546	32.569	32.592	32.615	32.638	32.661	32.683	32.706	32.729	32.752	32.775	1,440
1,450	32.775	32.798	32.821	32.843	32.866	32.889	32.912	32.935	32.958	32.980	33.003	1,450
1,460	33.003	33.026	33.049	33.072	33.094	33.117	33.140	33.163	33.186	33.208	33.231	1,460
1,470	33.231	33.254	33.277	33.300	33.322	33.345	33.368	33.391	33.413	33.436	33.459	1,470
1,480	33.459	33.482	33.504	33.527	33.550	33.573	33.595	33.618	33.641	33.664	33.686	1,480
1,490	33.686	33.709	33.732	33.754	33.777	33.800	33.823	33.845	33.868	33.891	33.913	1,490
1,500	33.913	33.936	33.959	33.981	34.004	34.027	34.049	34.072	34.095	34.117	34.140	1,500
1,510	34.140	34.163	34.185	34.208	34.231	34.253	34.276	34.299	34.321	34.344	34.366	1,510
1,520	34.366	34.389	34.412	34.434	34.457	34.480	34.502	34.525	34.547	34.570	34.593	1,520
1,530	34.593	34.615	34.638	34.660	34.683	34.705	34.728	34.751	34.773	34.796	34.818	1,530
1,540	34.818	34.841	34.863	34.886	34.909	34.931	34.954	34.976	34.999	35.021	35.044	1,540

DEG F	0	1	2	3	4	5	6	7	8	9	10	DEG F

* CONVERTED FROM DEGREES C(IPTS 1968).